A MANAGEMENT SUMMARY OF THE PHASE I/II ARCHAEOLOGICAL SURVEYS FOR THE PLANNED OGLETOWN INTERCHANGE, NEWARK, DELAWARE

DELDOT PROJECT----- DELDOT ARCHAEOLOGY SERIES NO.42

FHWA FEDERAL AID PROJECT -----

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INTRODUCTION

The purpose of this management summary is to present the results of the Phase I location and identification archaeological survey and Phase II determination-of-eligibility testing of the proposed Ogletown Interchange Project in Ogletown, White Clay Creek Hundred, New Castle County, Delaware (Figures 1 and 2). Approximately 70 acres including two and one-half miles of right-of-way (ROW) are included in this project. The fieldwork was undertaken by the University of Delaware Center for Archaeological Research between June 1985 and December 1985.

RESEARCH METHODS

Phase I research consisted of two steps: 1) background and archival research, and 2) field survey. Background and archival research consisted of consultation with the staff of the Delaware Bureau of Archaeology and Historic Preservation (BAHP), review of BAHP site files and inventories of prehistoric and historic cultural resources in the project area, review of historic atlases and maps, interviews with local landowners and experts in local history, review of archival materials such as deeds, tax assessments, probate records, road books and petitions, and other court records, and a survey of the prehistoric archaeological literature on applicable predictive models (Custer 1983, 1984; Custer and DeSantis 1986). A major component of the background research was the reviewing of the original Phase I/II survey data generated by Thomas (1980). Important locational information was also obtained by the review of as-built DOT construction maps from 1930 and 1950 roadway improvements in the Ogletown area. The

FIGURE 1
Project Area

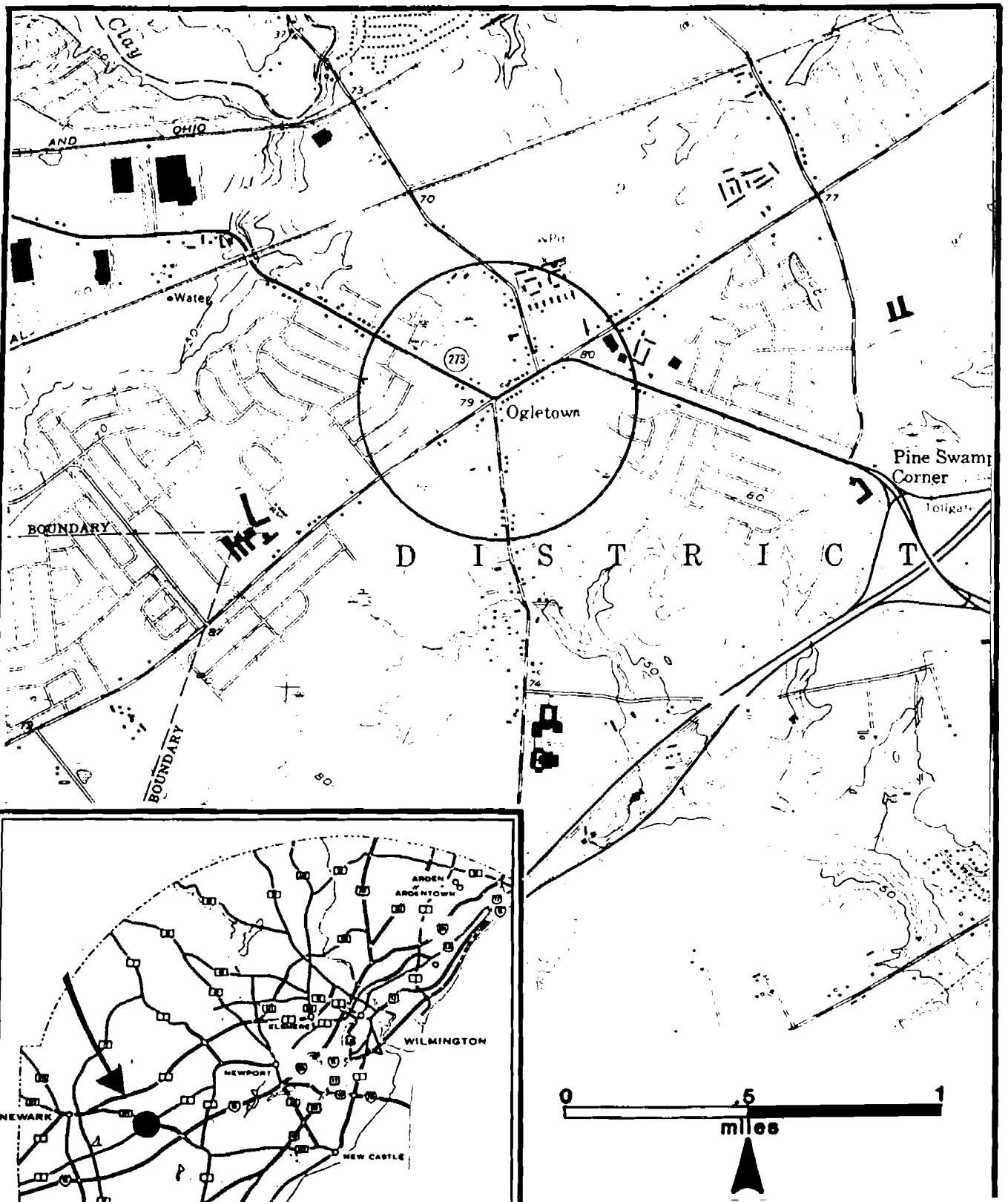
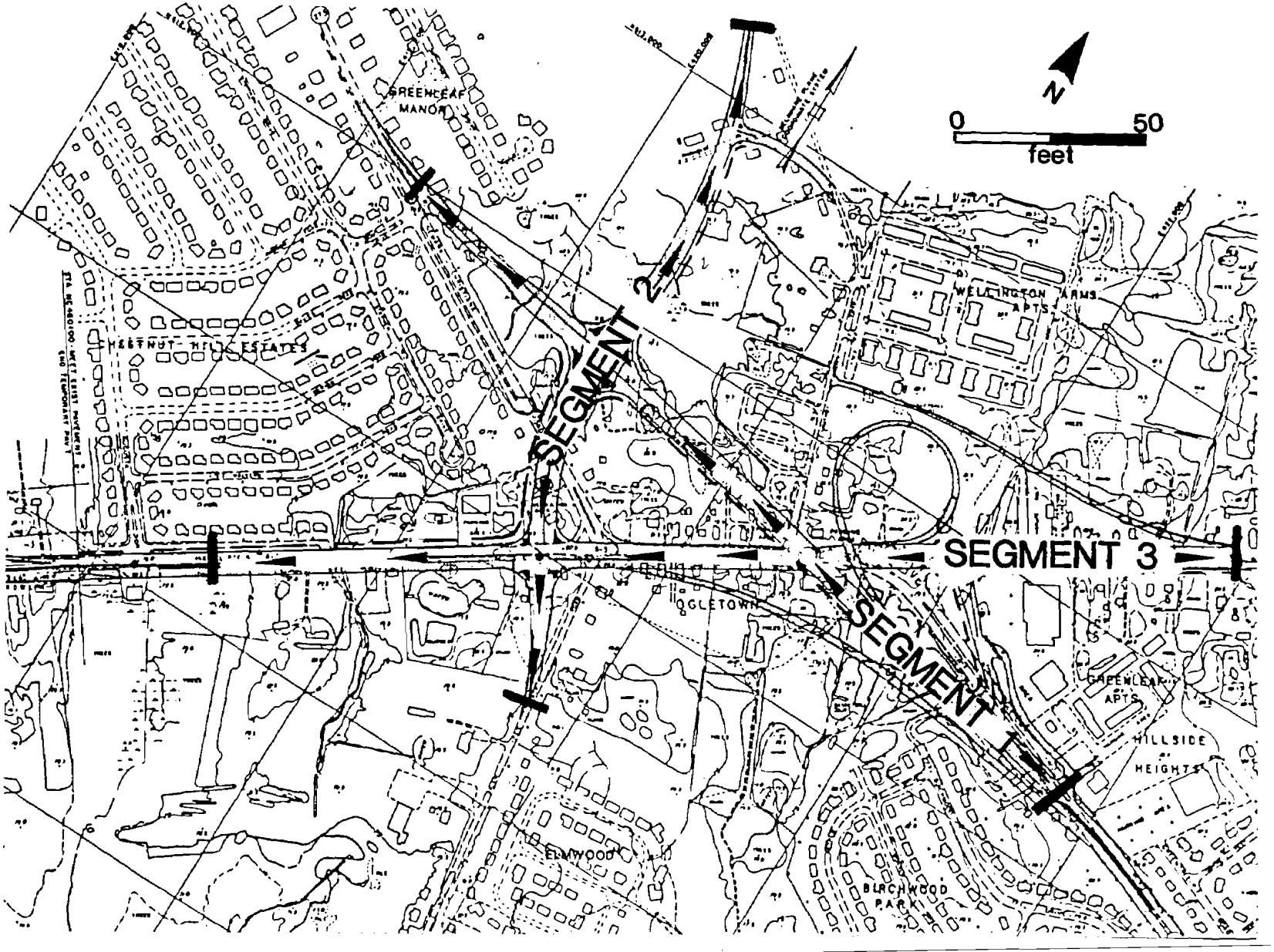


FIGURE 2
Proposed Alignments–Ogletown Interchange Project



result of this research was the creation of a cultural sensitivity map for the project area which shows sites identified or located by Thomas and also additional sites identified by the present Phase I research (Figure 3). Prior to the start of fieldwork, a proposed research strategy was submitted to the BAHP for approval (Appendix I, Coleman and Custer 1985).

Field survey and excavation methods of this Phase I/II location-identification survey included an initial pedestrian survey of the entire project area, including the specific proposed alignments (Figure 3). Based on the present Phase I archival research and the cultural resource survey of Thomas (1980), Phase I and II test excavations were carried out at a total of eight sites. In conjunction with these excavations, extensive soil augering was carried out to identify areas of undisturbed soils. Surface collections were not carried out at any of the eight sites due to a consistent lack of surface exposure. In culturally sensitive areas within the project area containing identified sites, or where there was a potential for undisturbed buried landscapes, 1m test units, 3'x3', 5'x5', and shovel test pits were excavated within ROW alignments in the project area (Figures 4 and 5). All excavated soils were screened through 1/4" mesh.

Phase II testing was carried out to determine the National Register eligibility of any sites discovered during the Phase I survey. Phase II testing at prehistoric sites consisted of the systematic excavation of measured test units and shovel test units to determine the contextual integrity and limits of these sites. Phase II testing at historic sites identified by the

FIGURE 3
Cultural Sensitivity Map

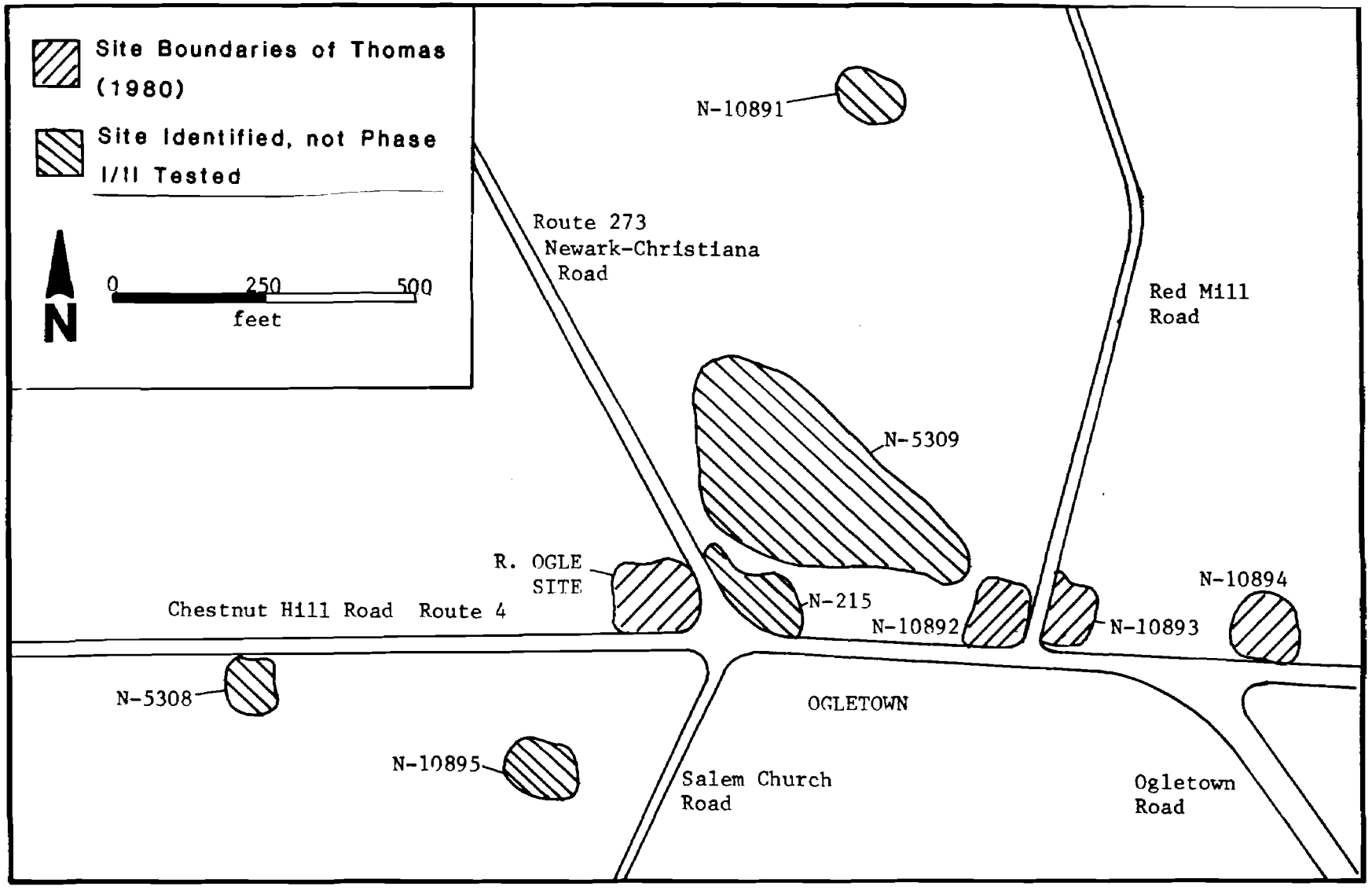


FIGURE 4
Segment 1 Testing

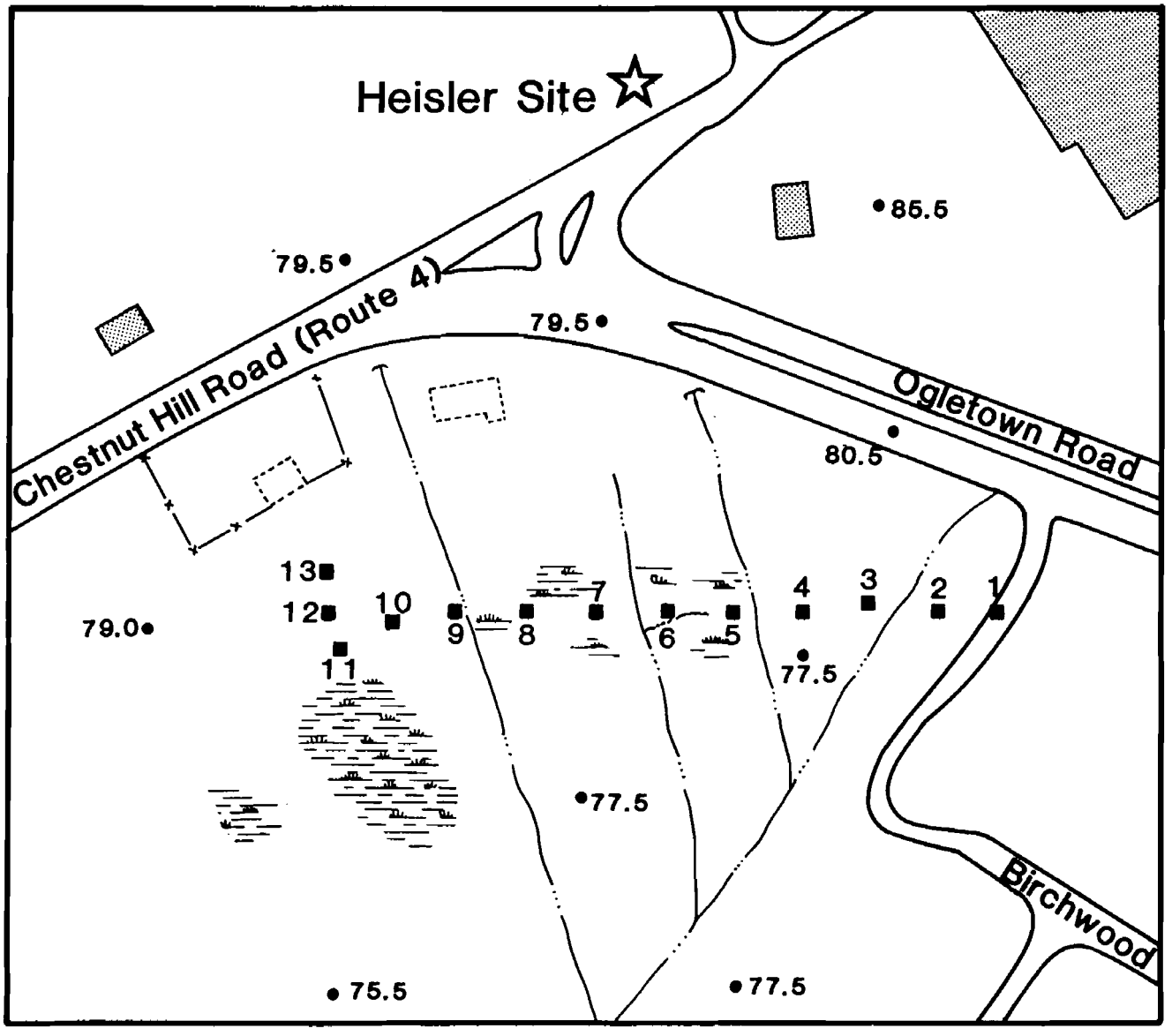


TABLE 1
Ogletown Interchange
Current Status of Cultural Resources

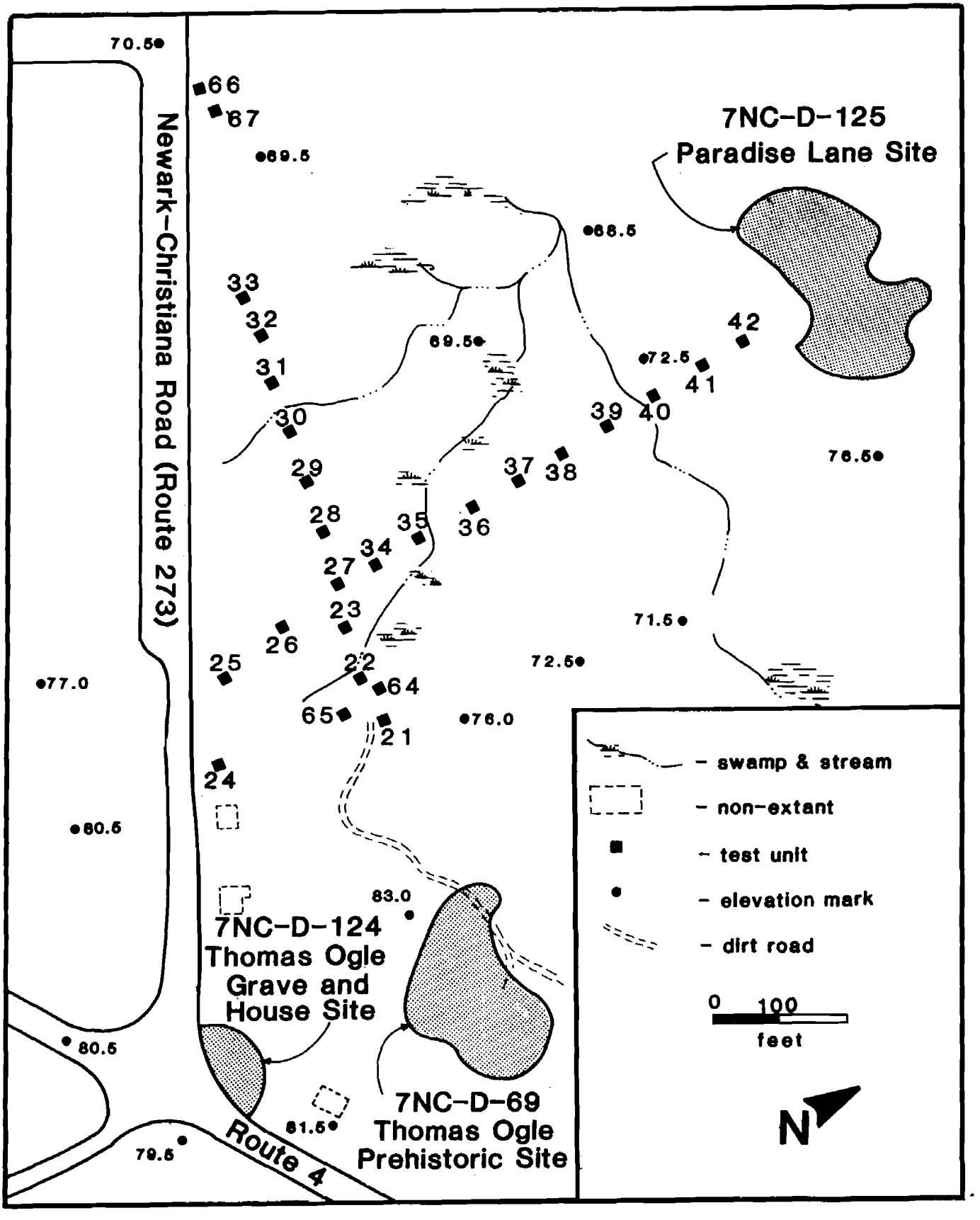
CULTURAL RESOURCE NAME	CRS #	ARCH. SITE #	A	B	C	D	E	F	G	H	I	J
Dairy Queen Site	10895	7NC-D-129	X				X		X	X	X	X
Paradise Lane Site	10891	7NC-D-125	X				X		X	X	X	X
W. E. Heisler Site	10894	7NC-D-128	X	X	X	X		X		X	X	
Thomas Ogle Prehistoric Site	5309	7NC-D-69	X				X		X	X	X	
W. E. Heisler Tenant House Site	10893	7NC-D-127	X		X	X		X		X	X	
A. Temple Site	5308	7NC-D-68	X	X	X	X	X	X		X	X	X
Thomas Ogle House and Gravesite	215	7NC-D-124	X	X	X	X	X	X		X	X	
John Ruth Inn Site	10892	7NC-D-126	X	X	X	X		X		X	X	X
Robert Ogle House Site				X	X	X		X				

KEY:

A - BAHP File information with CRS Number
B - appears on Rea and Price (1849)
C - appears on Beer's Atlas (1898)
D - appears on Baist's Atlas (1893)
E - identified by Thomas (1980)
F - historic archaeological site
G - prehistoric archaeological site
H - Phase I investigation completed
I - Phase II testing completed
J - data recovery recommended

FIGURE 5

Segment 1 and 2 Testing



Phase I testing and research consisted of the excavation of 3'x 3' and 5'x 5' units. In conjunction with this testing, backhoe excavation was carried out on historic sites where recent demolition fill or asphalt covered the ground surface.

RESULTS

Table 1 lists the current status of all of the cultural resources discovered during the background research and shown on Figure 3. Archaeological investigation was conducted on all sites that fell within the ROW alignments of the proposed interchange concept (Figure 3). All sites within the ROW that were identified during the Phase I background research were tested. Not only were the specific alignments of the interchange subjected to cultural resource survey but the entire 70 acres within the proposed project area was extensively field checked through pedestrian survey and soil augering.

To facilitate the discussion of the project's results, the project area was divided into three parts; 1) the realignment of Route 273 from Birchwood Park to its reconnection with the Ogletown-Newark Road in the vicinity of Ogletown Home Cooking, 2) the realignment of Salem Church Road from the Salem Church Road Industrial Park northward to its reconnection with Red Mill Road at Paradise Lane, 3) areas impacted by the widening of and by other construction related to the improvement of Route 4 (Figure 2). A summary of the work conducted in each segment is presented below, and includes a discussion of the sites located and identified, the disturbed areas of the ROW within the segment, and the areas in the segment where no sites were found.

Segment 1: Birchwood Park to Ogletown Home Cooking

The eastern third segment of the ROW alignment was found to be extensively disturbed by commercial and residential development and previous DelDOT demolition activity. Additionally, much of the ROW alignment area was poorly drained, especially the Birchwood Park to Route 4 segment and the western third of the segment from the proposed signalized intersection to Ogletown Home Cooking. The potential for both historic and prehistoric site location in these areas was correspondingly low. Three of the cultural resources identified in the background research and listed in Table 1 were located in the ROW of this segment. Only one of these, the prehistoric component of the Thomas Ogle Site (N-5309, 7NC-D-127), had been previously identified by Thomas (1980). The other two sites not identified were historic archaeological sites, the John Ruth Inn Site (N-10892, 7NC-D-126) on the northwestern corner of the Red Mill Road/Route 4 intersection and the William H. Heisler Tenancy Site (N-10893, 7NC-D-127), on the northeastern Corner of the same intersection. The third site, the prehistoric component of the Thomas Ogle Site (N-5309, 7NC-D-69), was located in the middle of the segment, northwest of the two historic sites and on the most prominent rise in the project area. No additional sites were located by the excavation of 1m test units within this segment ROW (Figure 4 and 5).

Segment 2: Salem Church Road Industrial Park to Red Mill Road

The majority of ROW within the central part of this segment was found to be heavily disturbed by residential and commercial

development, and by previous DelDOT construction activities on both sides of the proposed alignment. The southern terminus was in agricultural production and all of the northern section was found to be heavily wooded containing relatively undisturbed soils.

Testing was conducted at all identified sites within the proposed alignment in this segment, except at the Robert Ogle Site presently occupied by a Shell gas station (Figure 2). Two of these sites had been identified but not located by the initial Phase I survey of Thomas (1980). Both were prehistoric sites; the Dairy Queen Site, (N-10895, 7NC-D-121) and the Paradise Lane Site, (N-10891, 7NC-D-125). One other historic site, the Robert Ogle Site was identified through archival research but not archaeologically tested by the present Phase I/II research. No other sites were identified in this segment of the ROW through the excavation of 1m test units (Figure 5).

Segment 3: Route 4 Improvements

Much of the ROW in this segment was found to be heavily disturbed, consisting of fallow fields and lots, and scrub brush which have formed after the 1960's and 1970's demolition by DelDOT of residential and commercial structures along the road. Since that time parcels along the northern ROW have been redeveloped for residential and commercial use. This was found to be especially true for the eastern and central parts of this segment, the western area having been much less disturbed.

The initial Phase I survey by Thomas (1980) had identified and located two historic archaeological sites. The A. Temple

Site (N-5308, 7NC-D-68), was located at the western terminus of this segment. The historic component of the Thomas Ogle Site and grave (N-215, 7NC-D-124) was located on the southeast corner of the intersection of Route 4 and the Ogletown-Newark Road. Archival Phase I research identified one additional historic site not identified or located by Thomas (1980), the William H. Heisler House Site (N-10894, 7NC-D-128). This site was located at the eastern terminus of this segment. No other sites were identified by Phase I testing in this segment of the ROW.

Table 1 presents a list of all of the sites located within the project area and the compliance status of each site is also noted.

The following is a more detailed summary of the work conducted at each of the above named sites. This summary includes the site name and CRS number, a brief statement concerning the location of the site, a description of the Phase I and Phase II survey methods, a discussion of the results of the fieldwork, a statement concerning the National Register eligibility of the site, the expected impact of the road project on the site, and any alernative mitigation recommendations that may apply to the site.

SITE NAME: Dairy Queen Site

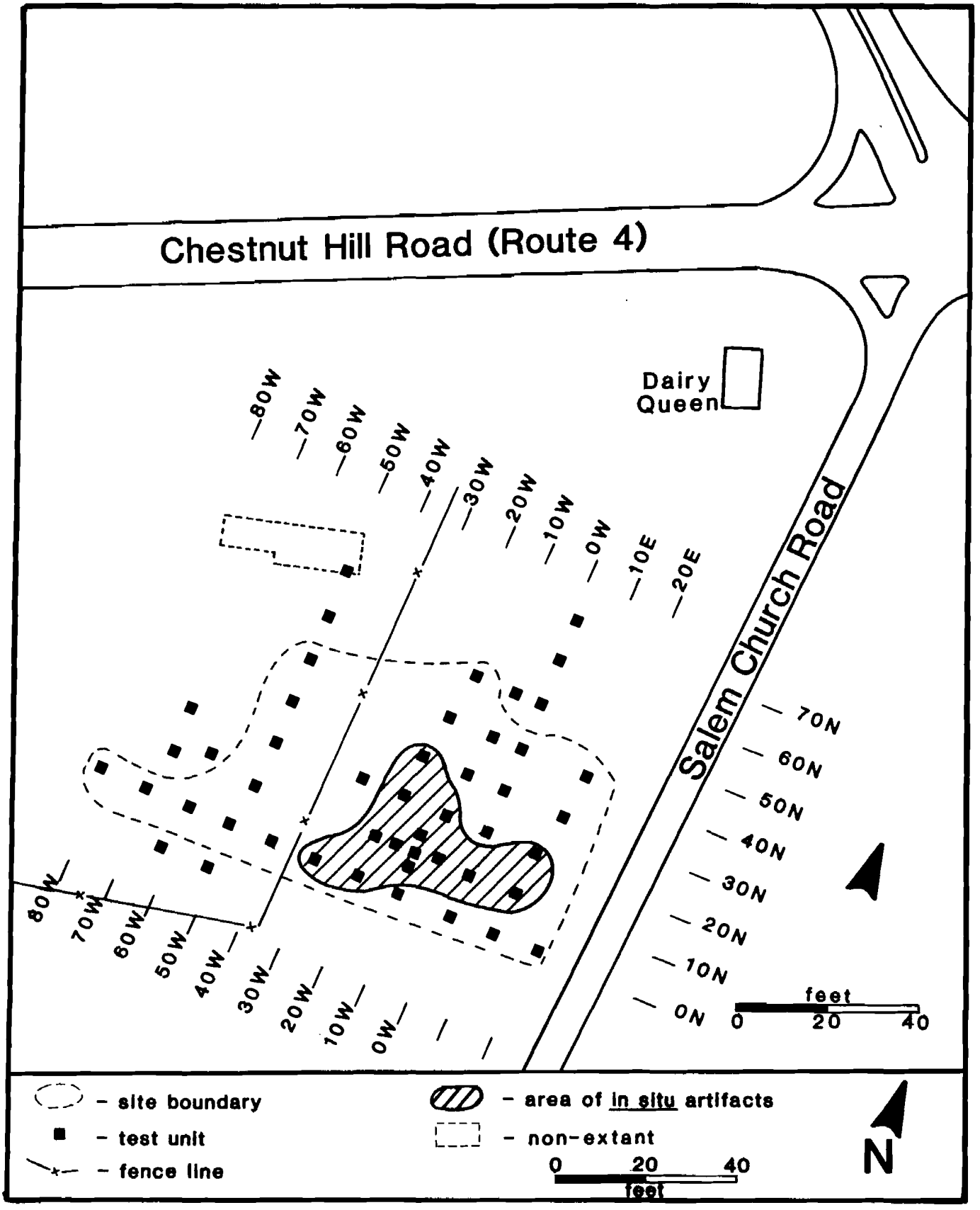
SITE NUMBER: 7NC-D-121

CRS NUMBER: N-10895

LOCATION DESCRIPTION: The Dairy Queen Site is located on a knoll and adjacent slopes, approximately 300' south of Route 4 and 300' west of Salem Church Road (Figures 2 and 6). To the

FIGURE 6

Dairy Queen Site N-10895, 7NC-D-129



north and downslope of the site is a small ephemeral stream draining a natural wetland/spring now developed into a artificial pond.

PHASE I SURVEY METHODS: The site was identified by Thomas (1980) through information supplied to him by local informants. A limited testing program which employed five shovel test excavations provided no indication of prehistoric occupation. The present Phase I excavation of 11 1 m test units on an east-west transect across the site recovered artifacts from both the plowzone horizon and from intact soils 30-40 cm below ground surface including chert, argillite, quartz and jasper debitage and flakes and several biface fragments and utilized flakes.

PHASE II TESTING METHODS: An additional 37 1 m test units were excavated to determine the site limits and these limits are noted in Figure 6. While most of the artifacts recovered were derived from plowzone contexts, more debitage, a broken biface, and a bifacially flaked tool were recovered from good stratigraphic context in the additional testing. Figure 6 also shows the area from which artifacts were recovered from intact soils beneath the plowzone.

DISCUSSION OF RESULTS: Geomorphological and pedological analysis of the soils at the site indicate that within a restricted area approximately 30 m x 30 m in size, artifacts are present in good and unplowed stratigraphic context, buried by low energy colluvial deposits. The projectile point is an non-diagnostic stemmed variety which probably dates to the Woodland I time period (3000 B.C. - A.D. 1000). The relatively small size of the site and the limited range of tool types suggests an ephemerally

TABLE 2

Dairy Queen Site
7NC-D-129, N-10895 - General Artifact Inventory

	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Jasper Flake Utilized	L.S.B.R. Quartz	Quartz SSB Utilized Fragment	Jasper Biface Stem	Quartz Point Constructing Site	Quartz Core	F.C.R.	Redware	Ironstone	Whiteware	Yellowware	Pearlware	Creamware	Tin-glazed Earthenware	Stoneware	Salt-glazed Stoneware	Porcelain	Pipestem Fragments	Flat Glass	Curved, Clear Glass	Curved, Color Glass	Building Material	Nails	Screws	Fence Staples	Misc. Ferrous Metal	Misc. Non-ferrous Metal	Vinyl/ Plastic	Bone	Gunflint	Leather	Belt Buckle	Button	Seeds	TOTAL
ON,52W TU 1 lv. 1 (PZ)	2			4								7											1			3	6			7									31
ON,52W TU 1 lvs. 2-4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ON,42W TU 2 lv. 1 (PZ)	1			1								4		3					1	1			3			7												21
ON,42W TU 2 lv. 2																										1												1
ON,42W TU 2 lvs. 3-4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ON,32W TU 3 lv. 1 (PZ)		(1)		4								1														7	3		2										17(1)
ON,32W TU 3 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ON,22W TU 4 lv. 1 (PZ)		1										5					1						1			10												18
ON,22W TU 4 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10N,22W TU 5 lv. 1 (PZ)				3								2		1												12	2												20
10N,22W TU 5 lv. 2				1																																		1
10N,51W TU 6 lv. 1 (PZ)	1(1)																						1				2											4(1)
10N,51W TU 6 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10N,12W TU 7 lv. 1 (PZ)	1			8								5		4	1									1		4												24
10N,12W TU 7 lv. 2	6(1)			13																						2												21(1)
10N,12W TU 7 lv. 3				3																																		3
20N,50W TU 8 lv. 1 (PZ)	1		1	3(1)								1											2	3		3		2				1						17(1)
20N,50W TU 8 lv. 2																										1												1
20N,50W TU 8 lv. 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ON,12W TU 9 lv. 1 (PZ)	1													1								1		1		6												10
ON,12W TU 9 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30N,50W TU 10 lv. 1 (PZ)				5								4											3	1		1	1					1	1					17
30N,50W TU 10 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ON,0E TU 11 lv. 1 (PZ)				2							1			1						1						4	1								1			11
ON,0E TU 11 lv. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ON,10E TU 12 lv. 1 PZ	(1)			1				1				1		1						1						4	2											11(1)
ON,10E TU 12 lv. 2																										1												1
ON,10E TU 12 lv. 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ON,20E TU 13 lv. 1 PZ		1		1(1)								1		3								1	2	54	1	4	1				1	1				1		82(1)
ON,20E TU 13 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SUBTOTAL	13(3)	2(0)	1	49(2)	0	0	0	1	0	0	1	31	0	14	1	0	1	0	1	3	2	1	12	71	1	70	18	2	2	7	1	3	1	0	0	1	1	0	311 (6)

7NC-D-129, N-10895 - General Artifact Inventory

	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Jasper Flake Utilized	L.S.B.A. Quartz Utilized	Quartz ESSR Utilized	Jasper Silica Pregment	Quartz Point Scar Contacting	Quartz Core	F.C.R.	Redware	Ironstone	Whiteware	Yellowware	Pearlware	Creamware	Tin-glazed Earthenware	Stoneware	Stoneware	Salt-glazed	Porcelain	Pipestem Fragments	Flat Glass	Curved, Clear Glass	Curved, Color Glass	Building Material	Nails	Screws	Fence Staple	Metal	Misc. Ferrous metal	Misc. Non-Ferrous metal	Vinyl/ Plastic	Bone	Gunflint	Leather	Belt Buckle	Button	Seeds	TOTAL
10N,11E TU 14 lv. 1 PZ	2			1																																				3
10N, 11E TU 14 lv. 2	1		1																																					2
10N, 11E TU 14 lv. 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20N,12E TU 15 lv. 1 PZ			1						1			1												2		64	1														70
20N,12E TU 15 lv. 2												3															1														4
20N,12E TU 15 lv. 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30N,14E TU 16 lv. 1 PZ	2											2													1	10	3	1					2							21
30N,14E TU 16 lv. 2											1																													1
30N,14E TU 16 lv. 3	1																																							1
30N,14E TU 16 lv. 4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
40N,15E TU 17 lv. 1 PZ	2	1		1								2		2									1	1			4	1												15
40N,15E TU 17 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20N,10W TU 18 lv. 1 PZ												1		1									1				3													6
20N,10W TU 18 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20N,10W TU 18 lv. 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30N,9W TU 19 lv. 1 PZ	2											2		1		2											9													16
30N,9W TU 19 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30N,9W TU 19 lv. 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
40N,70W TU 20 lv. 1 PZ												7		1				1									12	2			1									24
40N,70W TU 20 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30N,6W TU 21 lv. 1 PZ			1									1				1						1		1			1													6
30N,6W TU 21 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20N,20W TU 22 lv. 1 PZ				1								4				1											7													13
20N,20W TU 22 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30N,19W TU 23 lv. 1 PZ				1(1)								2	1	1		2		1							1		9													18(1)
30N,19W TU 23 lv. 2				1																							1													2
30N,19W TU 23 lv. 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
40N,17W TU 24 lv. 1 PZ				5								2		2		1			1									1													12
40N,17W TU 24 lv. 2															1																									1
40N,17W TU 24 lv. 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30N,16W TU 25 lv. 1 PZ				2								1		1		1							1				1													7
30N,16W TU 25 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20N,0E TU 26 lv. 1 PZ	1											2														1	3	2												9
20N,0E TU 26 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SUBTOTAL	11	1	3	12(1)	0	0	0	0	1	0	1	30	1	9	1	8	0	2	1	0	1	3	4	2	75	55	7	0	0	1	0	2	0	0	0	0	0	0	231(1)

7NC-D-129, N-10895 - General Artifact Inventory

	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Jasper Flake Utilized	Jasper Flake U.S.B.R.	Quartz Utilized	Quartz ESBR	Quartz Point Contracting Stem	Quartz Core	P.C.R.	Redware	Ironstone	Whiteware	Yellowware	Pearlware	Creamware	Tin-glazed Earthenware	Stoneware	Salt-glazed Stoneware	Porcelain	Pipestem Fragments	Flat Glass	Curved, Clear Glass	Curved, Color Glass	Building Material	Nails	Screws	Fence Staple	Misc. Ferrous Metal	Misc. Non-Ferrous metal	Vinyl/ Plastic	Bone	Gunflint	Leather	Belt Buckle	Button	Seeds	TOTAL
50N,0E TU 27 lv. 1 PZ												1				1								2	1													5
50N,0E TU 27 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10N,0E TU 28 lv. 1 PZ												1					1						27	5	44										19			97
10N,0E TU 28 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30N,0E TU 29 lv. 1 PZ	1	1										3														3												8
30N,0E TU 29 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
40N,0E TU 30 lv. 1 PZ	1											4				1																						6
40N,0E TU 30 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
60N,0E TU 31 lv. 1 PZ																	1										1											2
60N,0E TU 31 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
70N,0E TU 32 lv. 1 PZ	1											4	1										1		2	1				1								11
70N,0E TU 32 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
40N,50W TU 33 lv. 1 PZ		1		4(3)								5	1	1									27	4	2	14	11	1		4	2	3	2					82(3)
40N,50W TU 33 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
50N,50W TU 34 lv. 1 PZ																							9	6		4	7			3		4	3					36
50N,50W TU 34 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
60N,52W TU 35 lv. 1 PZ												5	2										19	2	2	14	1	1	3	2	2						1	54
60N,52W TU 35 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10S,52W TU 36 lvs. 1-2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0N,61.5W TU 37 lv 1 PZ	2	1		2								6				2							1	2		1												17
0N,61.5W TU 37 lvs 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0N,71W TU 38 lv. 1 PZ	2											4												1		1												8
0N,71W TU 38 lv. 2	1											1	2				1							1	1														7
0N,71W TU 38 lv. 3	1	2																																				3
0N,71W TU 38 lv. 4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0N,81W TU 39 lv. 1 PZ												1		1												3												5
0N,81W TU39 lvs. 2-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13.5N,62W TU 40 lv 1 PZ												1	1	2												8												12
13.5N,62W TU 40 lv. 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10N70W TU 41 lv. 1 PZ												3	1			1		1					1	45	6	4	1							1				64
10N,70W TU 41 lv. 2												1								1			1			1												4
10N,70W TU 41 lv. 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20N,70W TU 42 lv. 1 PZ												7				3					1			1		8												20
20N,70W TU 42 lvs. 2-6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NCM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SUBTOTAL	9	5	0	6(3)	0	0	0	0	0	0	0	47	8	4	0	8	3	1	0	1	1	0	86	69	58	62	21	2	3	10	4	7	5	1	19	0	0	1	44 (3)

7NC-D-129, N-10895 - General Artifact Inventory

	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Jasper Flake Utilized	L.S.B.R. Quartz Utilized	Quartz ESBR Utilized	Jasper Biface Fragment	Quartz Point Stem Contracting	Quartz Core	F.C.R.	Redware	Ironstone	Whiteware	Yellowware	Pearlware	Creamware	Tin-glazed Earthenware	Stoneware	Salt-glazed Stoneware	Porcelain	Pipestem Fragments	Flat Glass	Curved, Clear Glass	Curved, Color Glass	Building Material	Nails	Screws	Fence Staple	Misc. Ferrous Metal	Misc. Non-Ferrous metal	Vinyl/ Plastic	Bone	Gunflint	Leather	Belt Buckle	Button	Seeds	TOTAL
20N,70W TU 43 lv. 1 PZ	2		1				1			1		4		2		1									1	6												19
20N,70W TU 43 lv. 2																	1																						1
20N,70W TU 43 lv. 3	---NCM---																																						
20N,30W TU 44 lv. 1 PZ	1											2			.	2										6													11
20N,30W TU 44 lvs. 2-3	---NCM---																																						
13.5N,12W TU 45 lv 1 PZ												1			1	3	1					1	1		1	26													35
13.5N,12W TU 45 lv. 2	2			9	1																			1														13
13.5N,12W TU 45 lv. 3					1																																	1
13.5N,12W TU 45 lv 4-5	---NCM---																																						
10.5N8.5W TU 46 lv 1 PZ	.3	1	1	6	1							1												.			1												14
10.5N8.5W TU 46 lv. 2	1			1																																			2
10.5N8.5W TU 46 lvs 3-5	---NCM---																																						
6.5N,12W TU 47 lv 1 PZ	2(1)			(1)								2				1									1	2													8(2
6.5N,12W TU 47 lv. 2	1	1		1		1																			1													5
6.5N,12W TU 47 lv. 3	1																																						1
6.5N,12W TU 47 lvs 4-5	---NCM---																																						
10N,17W TU 48 Lv. 1 PZ				1				.			2	2		1	1	1																							8
10N,17W TU 48 lv. 2	1			2														.																					3
10N,17W TU 48 lvs. 3-4	---NCM---																																						
SUBTOTAL	14(1)	2	2	20(1)	3	1	1	0	0	1	2	12	0	3	2	8	2	0	0	0	0	1	1	1	4	40	1	0	0	0	0	0	0	0	0	0	0	121(2)
TOTAL	47(4	10(1)	6	37(7)	3	1	1	1	1	1	4	120	9	10	4	24	6	3	2	4	4	5	103	243	138	227	47	4	5	18	5	12	6	1	19	1	1	1	1104(12

( ) Indicates artifacts with cortex

☐ Indicates utilized artifacts

utilized base camp or hunting/staging site. The presence of more than scattered debitage suggests that the site is more than a procurement site.

NATIONAL REGISTER ELIGIBILITY: The Dairy Queen Site is eligible for listing on the National Register under criteria D because the site is likely to yield information important in prehistory as it represents a well-preserved example of a rare site type for the Fall Line/Interior transition zone. Although many procurement sites have been recorded in upland slope settings in the Piedmont Uplands of northern Delaware, procurement sites from both the Fall Line and from the Interior study units (Custer 1983; Custer and DeSantis 1986) are rare. The Dairy Queen Site is especially unique in that it is a relatively well-preserved example of an upland site in a transitional zone. Usually natural erosion destroys sites in upland situations, however the Dairy Queen Site has escaped these impacts. Furthermore, most of the known sites for the Fall Line/Interior transition zone are either large base camps along major drainages, or small lithic scatters in the uplands. The Dairy Queen site is unique in that it represents an intermediate size site within this physiographic zone.

IMPACT: The site is within and adjacent to the direct impact zone of the project. Also, given its upland setting, the site is extremely susceptible to indirect effects of the project.

RECOMMENDED MITIGATION ALTERNATIVE: Data recovery is the recommended mitagation alternative because avoidance or preservation in place are not feasible due to the fragile nature of the archaeological remains.

SITE NAME: Paradise Lane Site

SITE NUMBER: 7NC-D-125

CRS NUMBER: N-10891

LOCATION DESCRIPTION: The Paradise Lane Site is located on a heavily wooded east-west trending rise of land, approximately 100' south of the end of Paradise Lane (Figures 2 and 7). To the south of the site is a large area of poorly drained woodland including several small bay/basin features.

PHASE I SURVEY METHODS: The predictive model developed by Thomas (1980) identified this location to be a possible site of prehistoric occupation. Thomas's testing at the site, which consisted of the excavation of four shovel tests, provided no evidence of prehistoric occupation and no further work was recommended. The site was located and identified during Phase I research through the course of excavation of five 1 m test units in a north-south transect within the proposed alignment in this area. Artifacts were recovered from an undisturbed context between 5 and 30 cm below ground surface, and included chert, quartz, and jasper debitage and flakes, fire-cracked rock, and several quartz broken bifaces. No features were encountered but all artifacts were recovered from intact soils.

PHASE II SURVEY METHODS: An additional 34 1 m test units were excavated to extent the grid created by the Phase I testing in an attempt to locate any features and to define the site limits which are noted in Figure 7. More debitage and flakes, several biface fragments, and a large quantity of fire-cracked rock were recovered from good stratigraphic context in the Phase II testing. Several units also recovered stemmed projectile points

FIGURE 7

Paradise Lane Site N-10891, 7NC-D-125

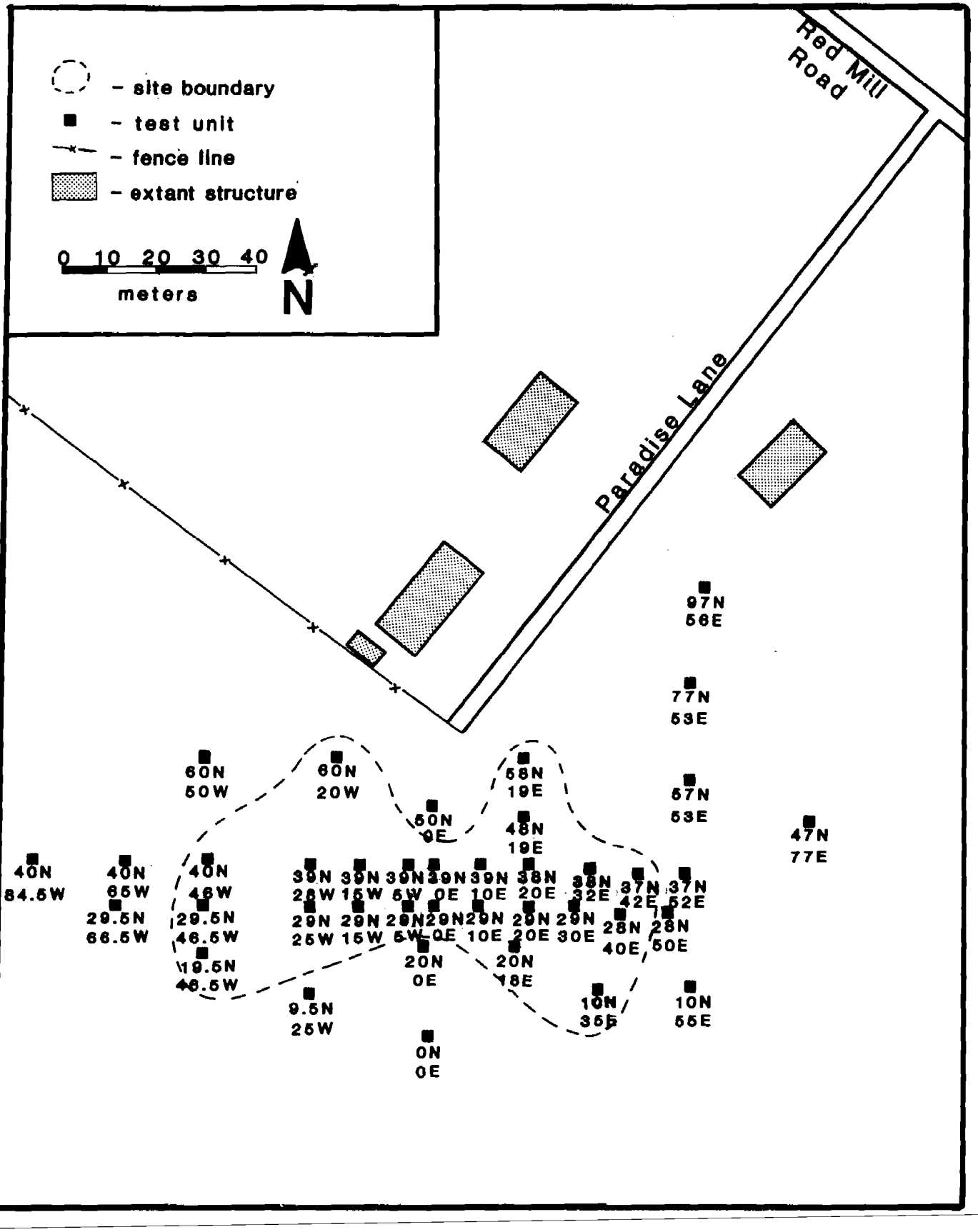


TABLE 3
Paradise Lane Site
7NC-D-125, N-10891 - General Artifact Inventory (1985)

	LA/WLI Side-notched Point	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Quartz Flake Tool	Jasper Flake Tool	Quartz E.S.B.R.	Chert E.S.B.R.	Jasper E.S.B.R.	Quartz L.S.B.R.	Jasper L.S.B.R.	Quartz Biface Fragment	Chert Core	F.C.R.	Minguannon Body Sherd	Clear Bottle Glass	Color Bottle Glass	Window Glass	Plastic	Misc. Metal	TOTAL
0N,0E lv. 1																	1				1	2
0N,0E lvs. 2-3	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
20N,1W lv. 1																	1			1		2
20N,1W lvs. 2-3	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
39N,0E lv. 1	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
39N,0E lv. 2	1	1													2							4
39N,0E lv. 3		3													1							4
39N,0E lv. 4	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
50N,0E lvs. 1-5	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
47N,77E lvs. 1-3	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
39N,10E lv. 1																					1	1
39N,10E lv. 2		(1)		(1)											1							1(2)
39N,10E lvs. 3-4	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
48N,19E lv. 1		(1)													1							1(1)
48N,19E lv. 2		1(1)	1												1							3(1)
48N,19E lvs. 3-4	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
39N,5W lv. 1		13	3(1)		3(1)			(1)			1				4							24(3)
39N,5W lv. 2		8							(1)				1		10				1			20(1)
39N,5W lv. 3		6																				6
39N,5W lv. 4	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
39N,20E lv. 1		1		1											1							3
39N,20E lv. 2		1			1																	2
39N,20E lvs. 3-4	----	----	----	----	----	----	----	----	----	----	-NCM-	----	----	----	----	----	----	----	----	----	----	----
39N,15W lv. 1		10(1)			(1)			1														11(2)
SUBTOTAL	1	44(4)	4(1)	1(1)	4(2)	0	0	1(1)	(1)	0	1	0	1	0	21	0	2	0	1	1	2	84 (10)

7NC-D-125, N-10891 - General Artifact Inventory

	LA/WLI Side-notched Point	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Quartz Flake Tool	Jasper Flake Tool	Quartz E.S.B.R.	Chert E.S.B.R.	Jasper E.S.B.R.	Quartz L.S.B.R.	Jasper L.S.B.R.	Quartz Biface Fragment	Chert Core	F.C.R.	Minguannon Body Sherd	Clear Bottle Glass	Color Bottle Glass	Window Glass	Plastic	Misc. Metal	TOTAL
39N,15W lv. 2		3(1)		1						1	.	1			2							8(1)
39N,15W lv. 3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
38N,32W lv. 1															1							1
38N,32W lv. 2					(1)										1							1(1)
38N,32W lv. 3		1(1)																				1(1)
38N,32W lv. 4	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
39N,25W lv. 1		4(1)		3	1(1)										2		1	1				12(2)
39N,25W lv. 2		(1)			(1)					1					4							5(2)
39N,25W lv. 3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
37N,42E lv. 1	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
37N,42E lv. 2		3			3										1							7
37N,42E lv. 3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
37N,42E lv. 4		1																				1
37N,42E lv. 5	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
29N,10E lv. 1		2(1)																				2(1)
29N,10E lv. 2		5(1)																				5(1)
29N,10E lv. 3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
37N,52E lvs. 1-3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
29N,0E lvs. 1-3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
29N,15W lv. 1		1(1)			1					1		1					1	2				7(1)
29N,15W lv. 2					(1)																	(1)
29N,15W lv. 3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
29N,10E lv. 1										1												1
29N,10E lv. 2		5			3										3							11
SUBTOTAL	0	25(7)	0	4	8(4)	0	0	0	0	4	0	2	0	0	14	0	2	3	0	0	0	62(11)

7NC-D-125, N-10891 - General Artifact Inventory

	LA/WLI Side-notched Point	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Quartz Flake Tool	Quartz Flake Tool	Jasper Flake Tool	Quartz E.S.B.R.	Chert E.S.B.R.	Jasper E.S.B.R.	Quartz L.S.B.R.	Jasper L.S.B.R.	Quartz Biface Fragment	Chert Core	F.C.R.	Minguannon Body Sherd	Clear Bottle Glass	Color Bottle Glass	Window Glass	Plastic	Misc. Metal	TOTAL
29N,10E lvs. 3-4												-NCM-											
29N,15W lv. 1												1				3							4
29N,15W lv. 2		3		1	(1)											1							5(1)
29N,15W lv. 3												-NCM-											
29N,20E lv. 1		(1)														4							4(1)
29N,20E lv. 2		1			1											9							11
29N,20E lv. 3												-NCM-											
29N,30E lvs. 1-3												-NCM-											
28N,30E lv. 1			(1)												1	3							4(1)
28N,30E lv. 2			(2)		1																		1(2)
28N,30E lvs. 3-4												-NCM-											
29.5N,46.5W lv. 1		5(1)	2	8(1)	5											2	1						23(2)
29.5N,46.5W lv. 2		5	3	4(4)												4							16(4)
29.5N,46.5W lv. 3					2																		2
29.5N,46.5W lv. 4												-NCM-											
28N,50E lvs. 1-3												-NCM-											
40N,46W lv. 1		(1)		1	1											2							4(1)
40N,46W lv. 2		1(1)			1											1							3(1)
40N,46W lvs. 3-4												-NCM-											
40N,65W lv. 1		(1)		1	1			[1]								1							3(1)[1]
40N,65W lv. 2-4												-NCM-											
60N,50W lvs. 1-2												-NCM-											
40N,84.5W lvs. 1-2												-NCM-											
60N,20W lv. 1												-NCM-											
SUBTOTAL	0	15(5)	5(3)	15(5)	12(1)	0		[1]	0	0	0	1	0	0	1	30	1	0	0	0	0	0	80(14)[1]

7NC-D-125, N-10891 - General Artifact Inventory

	LA/WLI Side-notched Point	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Quartz Flake Tool	Jasper Flake Tool	Quartz E.S.B.R.	Chert E.S.B.R.	Jasper E.S.B.R.	Quartz L.S.B.R.	Jasper L.S.B.R.	Quartz Biface Fragment	Chert Core	F.C.R.	Minguannon Body Sherd	Clear Bottle Glass	Color Bottle Glass	Window Glass	Plastic	Misc. Metal	TOTAL
60N,20W lv. 2															1							1
60N,20W lv. 3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
20N,18E lv. 1	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
20N,18E lv. 2		2	2			(1)																4(1)
20N,18E lv. 3					1																	1
20N,18E lv. 4	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
10N,35E lv. 1		2													3							5
10N,35E lv. 2		1																				1
10N,35E lv. 3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
10N,55E lvs. 1-4	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
58N,19E lv. 1															2							2
58N,19E lv. 2				1																		1
58N,19E lv. 3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
19.5N,46.5W lv. 1						1									12							13
19.5N46.5W lv. 2 NW¼		1	1												5							7
19.5N,46.5W lv. 2 NE¼		2(1)		(1)	(1)										14							16(3)
19.5N,46.5W lv. 2 SE¼			2(1)		2										3							7(1)
19.5N,46.5W lv. 2 SW¼															3							3
29.5N,66.5W lvs.1-3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
57N,53E lvs. 1-4	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
77N,53E lvs. 1-3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
97N,56E lvs. 1-3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
9.5N,25W lvs. 1-3	----	----	----	----	----	----	----	----	----	----	NCM	----	----	----	----	----	----	----	----	----	----	----
SUBTOTAL	0	8(1)	5(1)	1(1)	3(1)	1(1)	0	0	0	0	0	0	0	0	43	0	0	0	0	0	0	61(4)(1)
TOTAL	1	92(7)	14(5)	21(7)	27(8)	1(1)	(1)	1(1)	(1)	4	2	1	2	1	108	1	4	3	1	1	2	289(39)(2)

dating to the Woodland I Period.

DISCUSSION OF RESULTS: All of the artifacts were recovered from intact soils. Throughout the site the artifacts have been buried by a combination of aeolian and colluvial soil depositonal processes. The artifact assemblage is most similar to that of the Green Valley Site in the high percentage of unfinished artifacts with cortex. The artifact assemblage and areal extent of the site indicate that the Paradise Lane Site is also a micro-band base camp or procurement staging site associated with other site in the area such as the Delaware Park Site, Green Valley Complexes, and the Hawthorn Site.

NATIONAL REGISTER ELIGIBILITY: The Paradise Lane Site is eligible for inclusion under criteria D in the National Register because the site is likely to yield information important in prehistory as it represents an excellently preserved example of a rare site type for the Fall Line/Interior transition zone. Although micro-band camps have been recorded for the Woodland I Period in the adjacent Fall Line zone of northern Delaware, no well-preserved sites have been identified for the Interior zone or the transitional Interior/Fall Line zone. Usually natural erosion or modern development has destroyed these sites in northern Delaware. Most of the known sites for the surrounding area are large base camps along major drainages or small lithic scatters in upland areas. The Paradise Lane Site is unique in that it represents a well-stratified intermediate size site in an upland setting.

IMPACT: The eastern 50' feet of the site is located within the direct impact zone of the proposed alignment. In addition the unplowed setting of the site makes it highly susceptable to indirect effects from the project.

RECOMMENDED MITIGATION ALTERNATIVES: Data recovery is the recommended mitigation alternative if avoidance or preservation in place are not possible.

SITE NAME: Robert Ogle Site

SITE NUMBER: To be assigned

CRS NUMBER: To be assigned

LOCATION DESCRIPTION: The Robert Ogle Site is located on the northwest corner of the intersection of Route 4 and the Ogletown-Newark Road (Figure 3). Due east and across the Ogletown -Newark Road is located the Thomas Ogle House and Gravesite (N-215, 7NC-D-124).

PHASE I SURVEY METHODS: The Robert Ogle Site was not located or identified by the initial Phase I survey of Thomas (1980). Archival research associated with this Phase I survey identified the location to be the site of a farmstead (log dwelling, barn) occupied by the Ogle family in the early 19th century. Since 1956, the site has been occupied by an Arco gas station operation. No subsurface testing was conducted at this site due to access problems.

PHASE II SURVEY METHODS: It is difficuly to determine the extent or integrity of this site, due to access problems. Background research associated indicated the site was occupied by 1810 and continuously occupied until 1956. An 1841 Orphan's Court map

provides an excellent description of the property which at the time inclueds a dwelling house, kitchen, barn, garden, and various yard areas. It is possible that subsurface remains have survived the mid-20th century reconstruction and exist within the proposed ROW at this site. Phase II testing should be conducted to determine the integrity of this site.

NATIONAL REGSITER ELIGIBILITY: Unknown at this time.

IMPACT: The location of the farmstead at this site is within the direct impact zone of the project.

SITE NAME: William E. Heisler Site

SITE NUMBER: 7NC-D-105

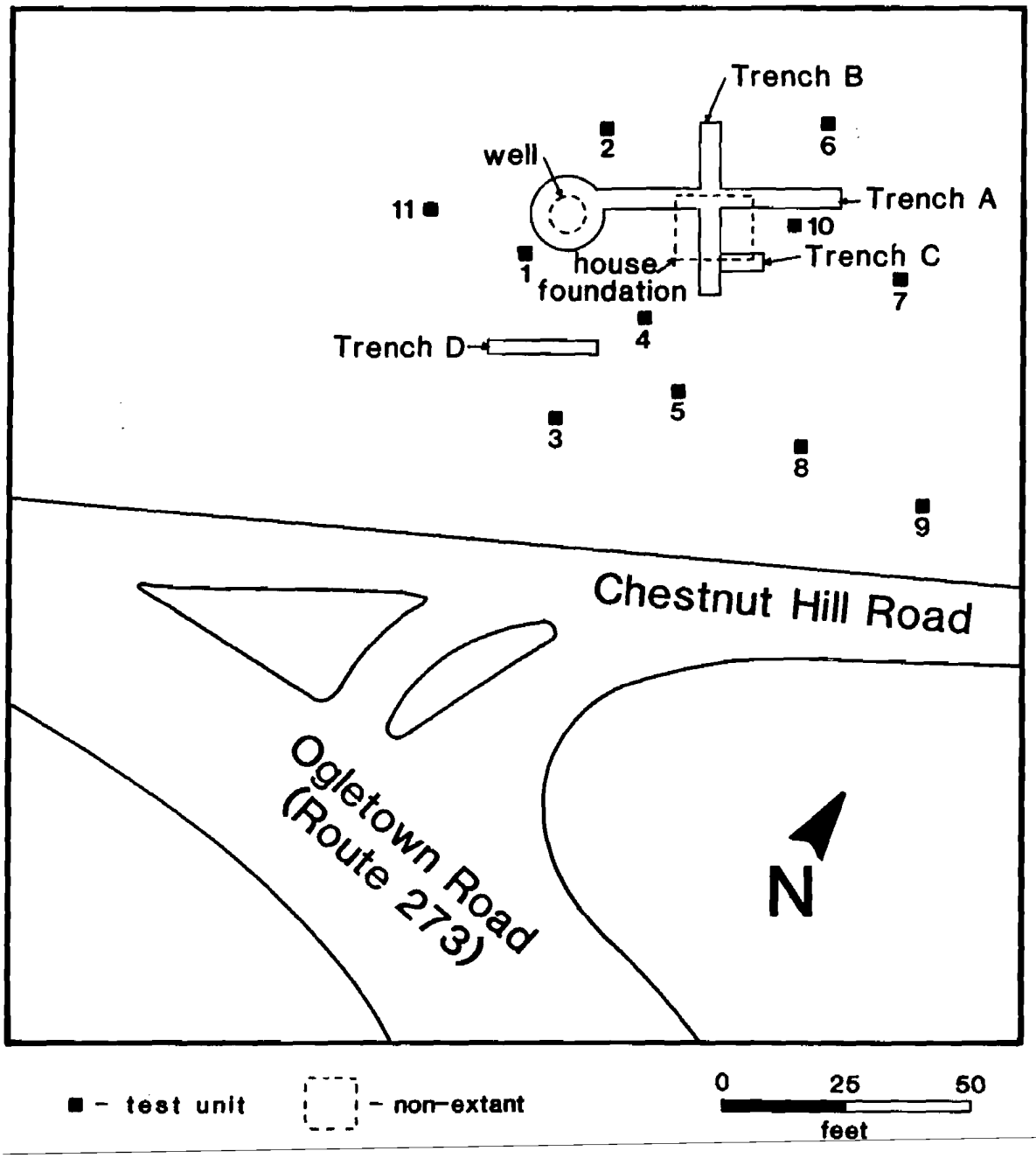
CRS NUMBER: N-10893

LOCATION DESCRIPTION: The William E. Heisler Site was located on a significant rise of land, approximately 200 feet north of Route 4 and 500 feet east of Red Mill Road (Figures 2 and 8). The site lies totally within the proposed ROW alignment for a cloverleaf connector from Route 273 to Route 4.

PHASE I SURVEY METHODS: This 19th century site including a large main residence and a number of support buildings was known to have been standing until ca. 1954, when it was destroyed by soil mining operations associated with residential development. During research associated with both Phase I surveys, a pedestrian survey of the ground surface showed it was obvious that at least two feet of topsoil had been removed from the entire area. No foundation remains existed at the ground surface. The 1985 Phase I pedestrian survey did locate a single cultural feature, a brick-lined well approximately six feet in diameter.

FIGURE 8

W. E. Heisler Site N-10894, 7NC-D-128



No other cultural features were encountered. In order to locate the site a total of ten test units were excavated within the suspected site area (Figure 8). Additionally, a total of four backhoe trenches were excavated within the house foundation and main activity areas to further determine the integrity of these areas. All encountered a thin deposit of heavily disturbed soils including rubble, and demolition fill, underlain by sterile sand. Artifacts dating from the 19th and 20th centuries, with no stratigraphic context, were recovered. No features were discovered.

PHASE II SURVEY METHODS: Owing to the extremely disturbed nature of the site, no further excavations of the ground surface were conducted. The brick-lined well was excavated to a total depth of fifteen feet and was found to be filled from top to bottom with demolition fill deposited during the destruction of the house structure.

DISCUSSION OF RESULTS: The demolition of the house, barn and all yard areas in 1954 thoroughly disturbed this site. There is no context to the artifacts that were recovered, as extensive subsurface disturbance, and grading, filling, and landscaping have occurred.

NATIONAL REGISTER ELIGIBILITY: The William E. Heisler Site is not eligible for inclusion to the National Register under any criteria.

IMPACT: This site is directly within the project ROW.

RECOMMENDED MITIGATION ALTERNATIVES: None.

SITE NAME: Thomas Ogle Site (Prehistoric Component)

SITE NUMBER: 7NC-D-69

CRS NUMBER: N-5309

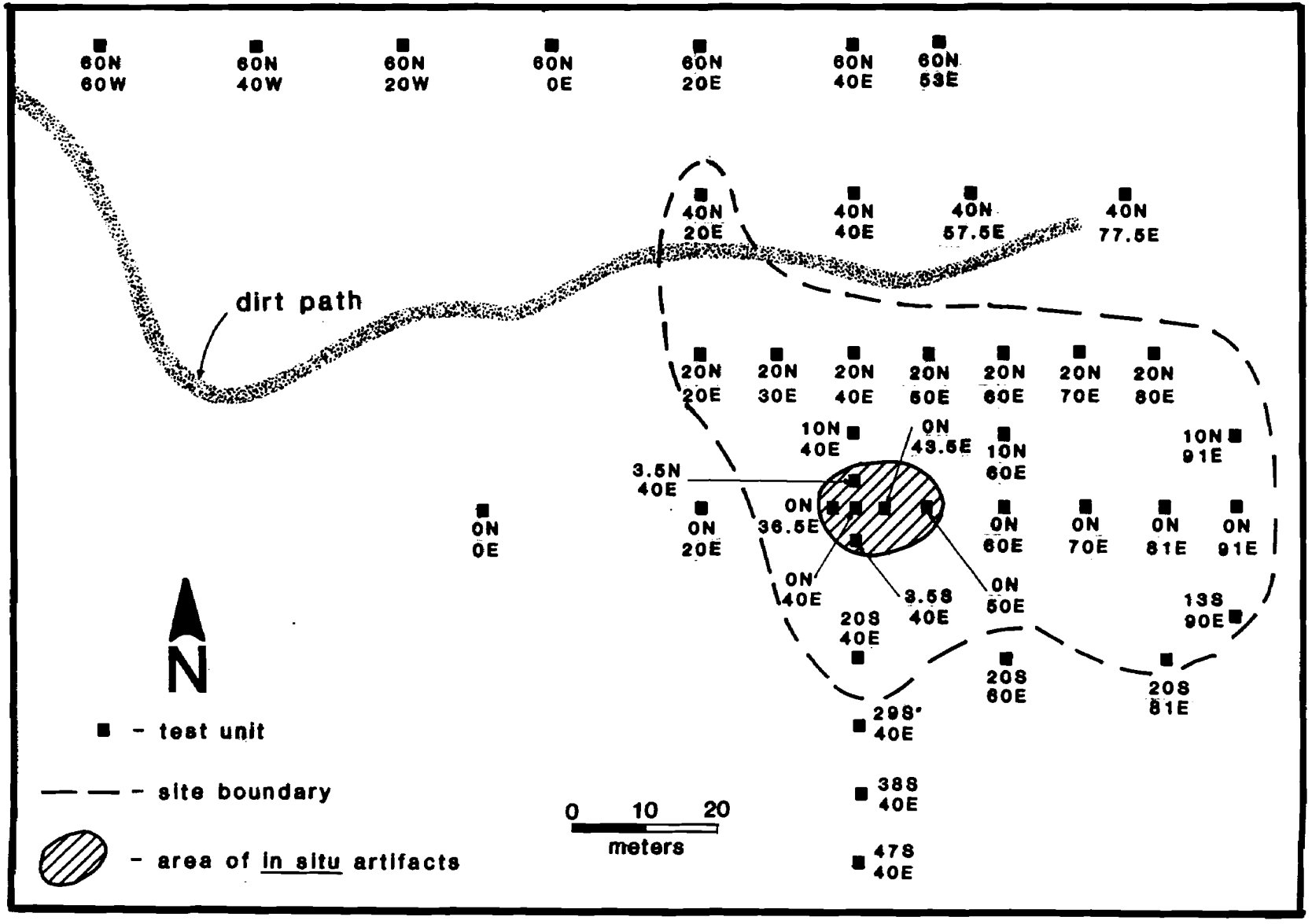
LOCATION DESCRIPTION: The Thomas Ogle Site is located on a prominent knoll just northeast of the Thomas Ogle Site (N-215) and approximately 300 feet east of the Newark-Ogletown Road (Figures 2 and 9). Surrounding the site on the north, south and east are poorly drained woodlands.

PHASE I SURVEY METHODS: This site was identified by Thomas (1980) on the basis of informant information. A survey of the site's supposed location employing both surface survey and limited subsurface testing failed to locate significant indications of prehistoric occupation. The site was located during the present Phase I research through the excavation of six 1 m test units. Debitage was recovered primarily from plowzone contexts, but one unit yielded flakes from colluvial soils 30-80 cm below ground surface.

PHASE II SURVEY METHODS: An additional 34 1 m test units were excavated to define the limits and contextural integrity of the site (Figure 9). Additional debitage and flakes, fire-cracked rock, and a stemmed biface were recovered from colluvial soils. Only two of these units revealed the presence of artifacts in buried contexts beneath the plowzone horizon. Additional testing, designed to bracket the units in the cardinal directions at five meter intervals yielded no buried prehistoric artifacts. The low density and the very spatially restricted nature of the buried remains precluded further archaeological investigations.

FIGURE 9

Thomas Ogle Site N-5309, 7NC-D-69



DISCUSSION OF RESULTS: The Thomas Ogle Site assemblage of limited debitage and limited tool types dispersed over a relatively large area indicates that the site is probably a multi-occupation procurement site. There was a definite absence of tools and utilized flakes. The site was plowed and except for within a 10 m x 10 m area the artifacts are not in good stratigraphic context.

NATIONAL REGISTER ELIGIBILITY: While procurement sites on knolls and hillside slopes are relatively uncommon in the Fall Line/Interior Zone (Custer and Wallace 1982; Custer 1983:105), plowing has disturbed the site's stratigraphic context. Therefore the site is not eligible for inclusion on the National Register under any criterion.

IMPACT: The eastern 75' of the site is located within the ROW alignment.

RECOMMENDED MITIGATION ALTERNATIVES: None.

SITE NAME: William E. Heisler Tenancy Site

SITE NUMBER: 7NC-D-127

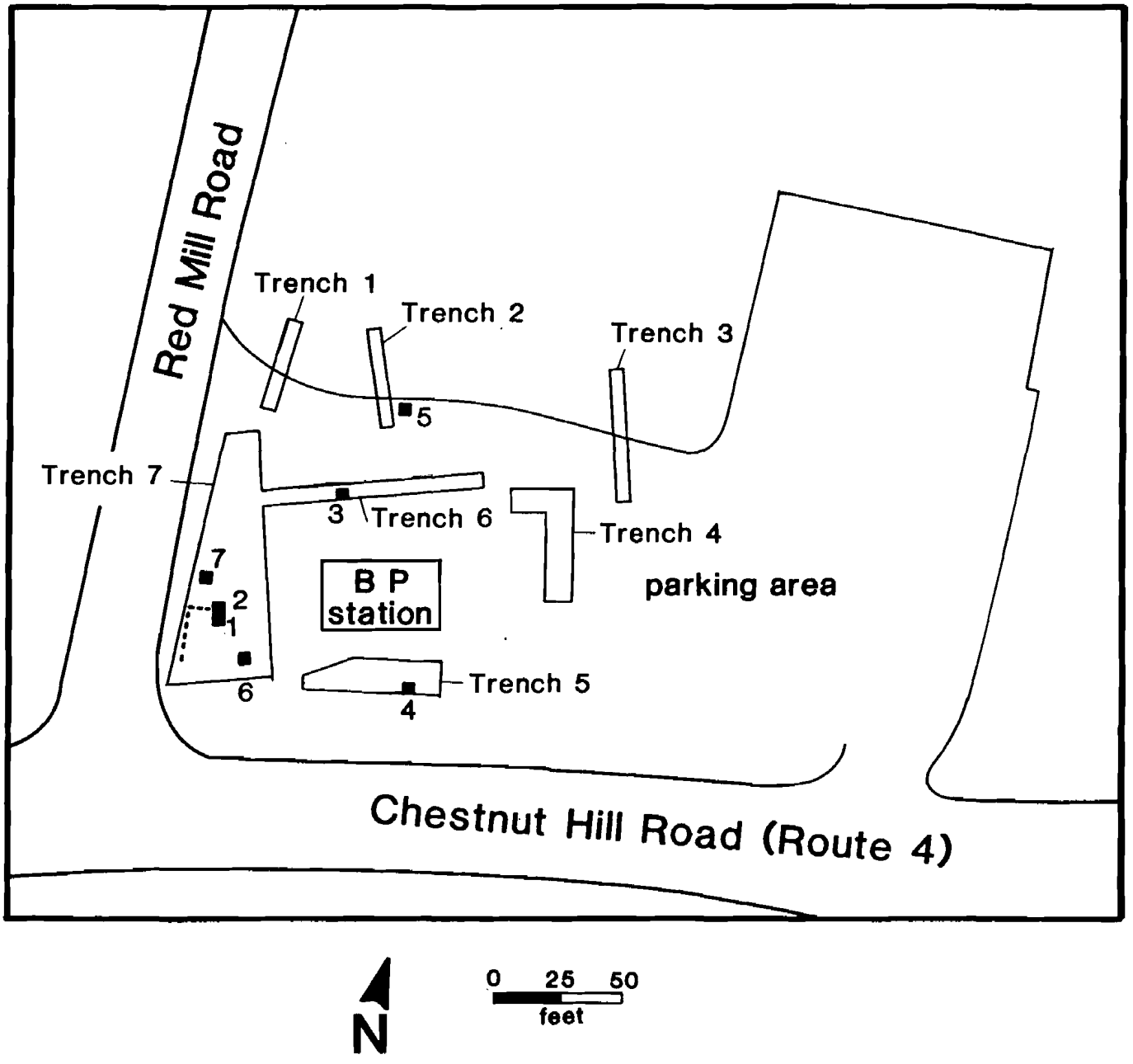
CRS NUMBER: N-10893

LOCATION DESCRIPTION: This site is located on the northeast corner of the intersection of Red Mill Road and Route 4 (Figures 2 and 10). The site is due east across Red Mill Road from the John Ruth Inn Site and approximately 600 feet due west of the William Heisler Site.

PHASE I SURVEY METHODS: The cultural resource survey of Thomas (1980) failed to identify this site. Background research associated with the final Phase I indicated that the site had

FIGURE 10

W.E. Heisler Tenancy Site N-10893 7NC-D-127



been initially occupied ca. 1868. A photograph of the house taken ca. 1880 shows the site contained a 2 1/2 storey stuccoed brick structure, a small carraige shed, and a single privy shed. The house structure was demolished ca. 1920 and the land remained vacant until 1965. Since 1965 the site has been the location of two gas stations with their buildings and gas platforms placed on different areas of the site with separate orientations. In order to identify and locate the house foundation and to determine the integrity of the surrounding yard areas, backhoe excavation was employed to strip off the asphalt and gravel fill layers (Figure 10). This extensive stripping revealed the western half of a cobble stone foundation buried under a two foot thick sequence of 20th century construction levels. Backhoe trenches 1, 2, 5, 6 and 7 also uncovered below this second asphalt and fill layer what appeared to be a buried topsoil horizon. The site area surrounding trenches 3 and 4 was not further tested.

PHASE II SURVEY METHODS: A total of seven measured excavation units were placed within the site area to determine the integrity of the buried topsoil level and to locate builder's trenches associated with the partial foundation. All but one of these units was placed within areas where the backhoe had previously removed the two gas station occupation sequences to expose a buried topsoil. One unit was placed adjacent to a feature in a backhoe trench wall. Outside of the foundation areas, the buried topsoil was found to have been throughly mixed and otherwise disturbed during previous construction activities. Artifacts dating from the mid-19th and 20th centuries were recovered. Several 20th century pipe trenches were located.

Within the foundation area and the surrounding yard areas, while a thicker topsoil layer remained, it had also been throughly mixed. Only the bottom two courses of the foundation remained intact. No builder's trenches were located and the only feature encountered was a very shallow posthole. Thus the stratigraphy of the entire site was found to be extensively modified and disturbed.

DISCUSSION OF RESULTS: As revealed by the extremely disturbed nature of the remaining soils present at the site, and the lack of any stratigraphic context to the recovered artifacts, it is evident that this site underwent considerable landscaping, grading and filling both when the house structure was demolished and during the construction of two gas stations. No further work is considered necessary at this site.

NATIONAL REGISTER ELIGIBILITY: This site is not considered eligible to the National Register under any criteria.

IMPACT: This site is located completely within the direct impact zone of the proposed alignment and will be completely destroyed by construction.

RECOMMENDED MITIGATION ALTERNATIVES: None.

SITE NAME: A. Temple Site

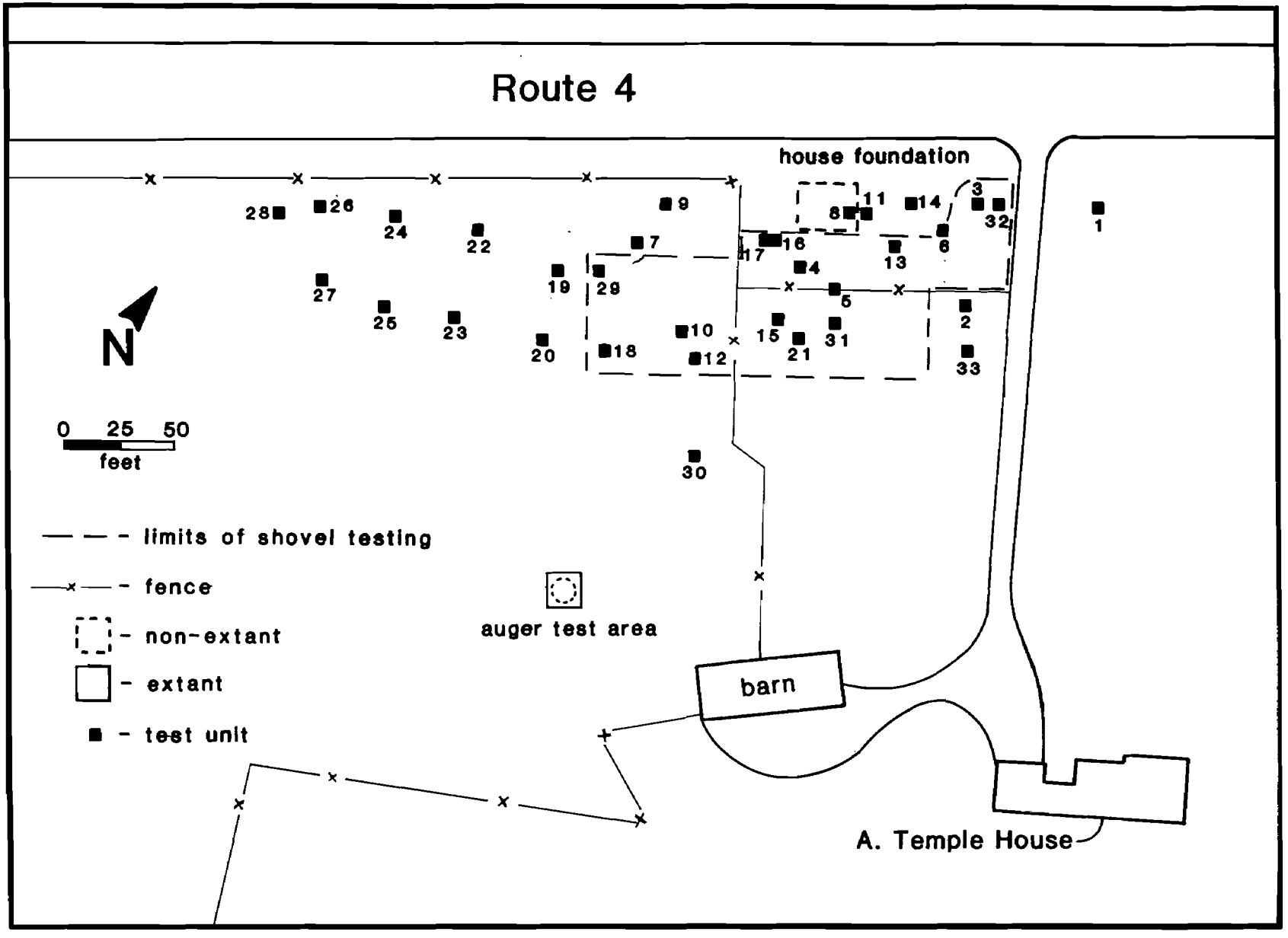
SITE NUMBER: 7NC-D-68

CRS NUMBER: N-5308

LOCATION DESCRIPTION: The A. Temple Site is located on the south side of Route 4, approximately one-quarter mile west of the intersection of Salem Church Road and Route 4 (Figures 2 and 11). Most of the outbuildings of this farmstead lie south of the ROW,

FIGURE 11

A. Temple Site N-5308, 7NC-D-68



with only the main house structure and yard area within the direct impact zone of any Route 4 widening.

PHASE I SURVEY METHODS: Thomas's (1980) archival research identified the cultural remains (cellar hole, well, 18th- 20th century artifacts) located by a pedestrian survey to be those associated with a farmstead occupied by 1849. At the time of the Thomas survey no subsurface excavations were carried out because of a denial of access by the owner, Mr. A. Temple. Further final Phase I research summarized in Coleman and Custer(1985) indicated the cultural resources could possibly be attributed to the Red House Plantation site, occupied circa. 1740. In order to further identify this site, a total of five 5x5' units were excavated adjacent to and within the cellar hole and within the yard area in the direct impact zone of the proposed ROW. The results showed that the main yard area, measuring approximately 120' E-W x 50' N-S, contained intact subsurface features represented by postholes and molds and trash midden features. Testing within the extant cellar hole uncovered a series of plaster and mortar floors, the earliest dating to the initial construction of the house, ca. 1840. This initial date of occupation of the site was supported by the artifact assemblage recovered in the other units consisting of yellowware, annular, hand-painted, and transfer print whiteware, and contemporaneous glass and metal artifacts. It thus appears from the testing that the A. Temple Site represents a secondary residence, probably a tenant house, constructed in the mid-19th century.

PHASE II SURVEY METHODS: An additional 27 2'x2'or 5'x5' test units and 425 shovel tests were excavated at this site to determine the extent of the site and the presence/absence of features within the site area (Figure 11). Outside the main yard area were located the foundations of five large support structures (two barns, granary, carriage shed, animal shed). The post hole testing and subsequent unit excavation identified a substantial trash midden to the west of the main yard area. The site area due south of the cellar hole was found to have been plowed, but several features were located beneath this plowzone. The western boundary of the site was identified through a dramatic drop in artifact frequencies. The eastern boundary of the site was defined by the present asphalt driveway, as the possible site area east of this showed extensive filling and landscaping. The artifact assemblage recovered by the Phase II testing also indicated an initial occupation of the site in the mid-19th century.

During the Phase II testing a series of photographs of the site were located in the possession of Harry Temple, the former owner's son. These photos of the main house, barn, and other support buildings show their construction to be characteristic of the mid-19th century. The house is of standard frame construction; very different than that reported by Thomas (1980).

DISCUSSION OF RESULTS: Excavations at this site produced a substantial collection of mid-19th to mid-20th century artifacts recovered from good stratigraphic contexts. Deed research showed that the property was owned by a series of absentee owners beginning in the early 18th century and continuing well into the

20th century. The main yard area contains an intact and well preserved, stratified artifact deposit within an approximately one foot thick topsoil, with buried structural and trash depositional features also present. The southwestern area of the site contains an excellently preserved assemblage of agricultural activity-related artifact deposits. The northwestern site area exhibits a significant deposit related to a secondary yard/agricultural activity area.

Additional excavations at the A. Temple Site and its associated outbuildings could make a substantial contribution to the studies of rural lifestyles and agricultural change in the mid-19th century. Investigations at the site could be used for comparative studies of artifact and site patterning with other mid-19th century archaeological sites in northern New Castle County such as the William Hawthorn site (Coleman et al. 1984), the Robert Ferguson site (Coleman et al. 1983), the Wilson-Slack site (Coleman et al. 1985), and other sites under study in other areas of New Castle County (Route 7, Route 141, Route 896).

NATIONAL REGISTER ELIGIBILITY: This site is considered eligible to the National Register under Criterion D, as it has and is likely to yield valuable information concerning the nature of rural life and agricultural and cultural change in northern Delaware during the 19th century. The site would provide an excellent data source for material culture study both as a comparative base collection and as a source of comparative material for previously excavated sites.

IMPACT: Both the main and secondary yard areas of the A. Temple Site are located within the direct impact zone of the proposed ROW alignment. The outbuilding complex associated with the site is within the range of indirect effects of the project.

RECOMMENDED MITIGATION ALTERNATIVES: Data recovery is the recommended mitigation alternative, as avoidance or preservation in place are not feasible due both to the nature of the archaeological deposits and the lack of alternative alignments due to present day land use patterning.

SITE NAME: Thomas Ogle Gravesite

SITE NUMBER: 7NC-D-124

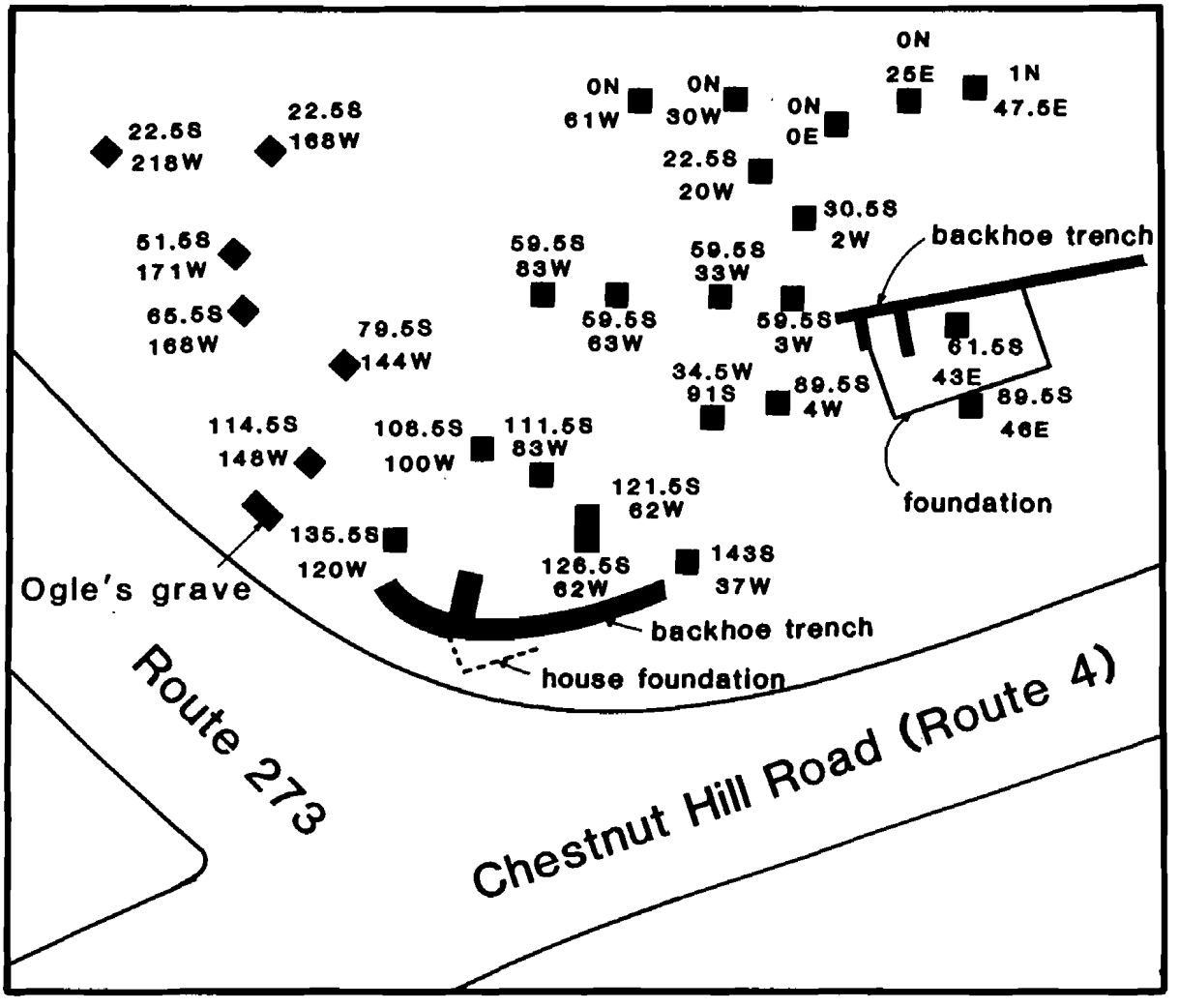
CRS NUMBER: N-215

LOCATION DESCRIPTION: The Thomas Ogle Site and Gravesite is located on the northeast corner of the intersection of Route 4 and the Ogletown-Newark Road (Figures 2 and 12). Both the grave and the house site are located within 10' of the present roadway.

PHASE I SURVEY METHODS: The site was identified by Thomas (1980) through archival research and informant information to be the former mid-18th century house site of Thomas Ogle, founder of Ogletown. Following this background research, a subsurface testing program was intiated to determine if significant archaeological remains existed to necessite archaeological mitigation. The results of this excavation, summarized in Coleman and Custer (1985) indicated that data recovery was an approporiate mitigation alternative by Thomas (1980). Additional Phase I research substantiated the location as the former house site of Thomas Ogle. However, two questions were

FIGURE 12

Thomas Ogle House and Gravesite
N-215, 7NC-D-124



raised concerning the recommendations for data recovery. The first concerned; A) whether the skeletal remains of Thomas Ogle lay beneath his extant tombstone; B) were instead buried underneath the present roadway as a result of a 1950's road widening operation; or C) were not present under the tombstone or under the road surface. The second question concerned the contextural integrity of the artifacts recovered from Thomas's (1980) shovel test excavations.

PHASE II SURVEY METHODS: An intensive testing program was carried out at the Thomas Ogle Site in order to both define the site's limits and provide answers to the above questions. In order to define the site's limits a series of 11 test units were located around the boundaries of the site suggested by Thomas (1980). This testing revealed that the distribution of 18th and 19th century artifacts was restricted to within 75' of the supposed house location. A series of 11 test units were also excavated in the back and side yard areas of the house. All of these units showed the remaining topsoil layer to be composed of 20th century artifacts in a mixed and throughly disturbed context. Artifacts recovered fron excavation in this area maintained no stratigraphic context. Several small features were observed but in most instances a 20th century fill horizon covered a 6" deposit of mixed topsoil. To further test the integrity of the area shovel tested by Thomas a series of backhoe trenches were excavated. The main trench running in an east-west orientation, encountered the southwest corner of the house foundation. Unfortunately this excavation also revealed that the Bell Telephone Company had emplaced a 20' x 10' concrete vault

approximately 15' deep into the former cellar hole of the Thomas Ogle House. During the emplacement a majority of the original foundation as well as the surrounding yard area had been destroyed. Large telephone cable trunk lines running into this vault had also disturbed significant areas surrounding the vault. Other disturbance revealed by this trench were obvious along the eastern half where at the boundary line between the Ogle site and a parcel sold to the Sunoco gas station in the 1960's, the entire topsoil horizon had been removed down to a sterile sandy clay and the area filled with recently mixed topsoil. This disturbance had the effect of eliminating an area of the site known to have contained a large barn as well as a number of support sheds. The disturbance created by the gas station construction was further tested by the excavation of a east-west trench along the rear wall of the barn foundation located on DelDOT construction maps. As had been reported by informants, the main gas station building had reused the barn foundation for its own foundation. The integrity of areas adjacent to this foundation had been totally destroyed through the emplacement of underground gas storage tanks.

In order to test the location of the skeletal remains, an excavation underneath the extant tombstone was initiated. After the removal of the tombstone, excavation through a 4-5 foot thick deposit of sterile sand, located a brick-lined vault, and approximately one foot deeper a thin layer of decomposed metal and wood. Below this, excavation in a restricted area exposed a portion of a human longbone. Limited testing in the skull area of

the vault also located fragments of bone. No further excavation was performed and the excavation was covered with plastic and the unit backfilled.

DISCUSSION OF RESULTS: Excavations at the site answered both of the questions posed by the Phase I research. The excavation of the Thomas Ogle gravesite located what appears to be the remains of Thomas Ogle. Local informants still maintain that three small headstones were located to the north of the head of the tombstone. Further excavation to locate these graves would be a natural step made in the excavation of the Ogle grave.

The contextural integrity of the archaeological deposits within the Ogle house site were found were to be very poor, a conclusion not reached by Thomas (1980) who recommended a data recovery operation for the site. Except for a small area to the west of the foundation, the site was found to have been extensively disturbed by plowing in its western and northern areas and by demolition and construction related disturbance in the house foundation area and in the eastern area of the site.

NATIONAL REGISTER ELIGIBILITY: The Thomas Ogle Site is not considered eligible to the National Register due to the disturbed nature of the foundation and of the archaeological deposits associated with the yard and other activity areas.

IMPACT: The Thomas Ogle Grave and House site are not within the proposed ROW alignment and will be preserved as an infield area within the project area.

RECOMMENDED MITIGATION ALTERNATIVES: Avoidance is recommended for the historic component of the Thomas Ogle Site. If the integrity of the gravesite area is threatened by construction, the remains of

the Ogle grave should be completely excavated and concurrently the surrounding area should be checked for additional graves.

SITE NAME: John Ruth Inn Site

SITE NUMBER: 7NC-D-126

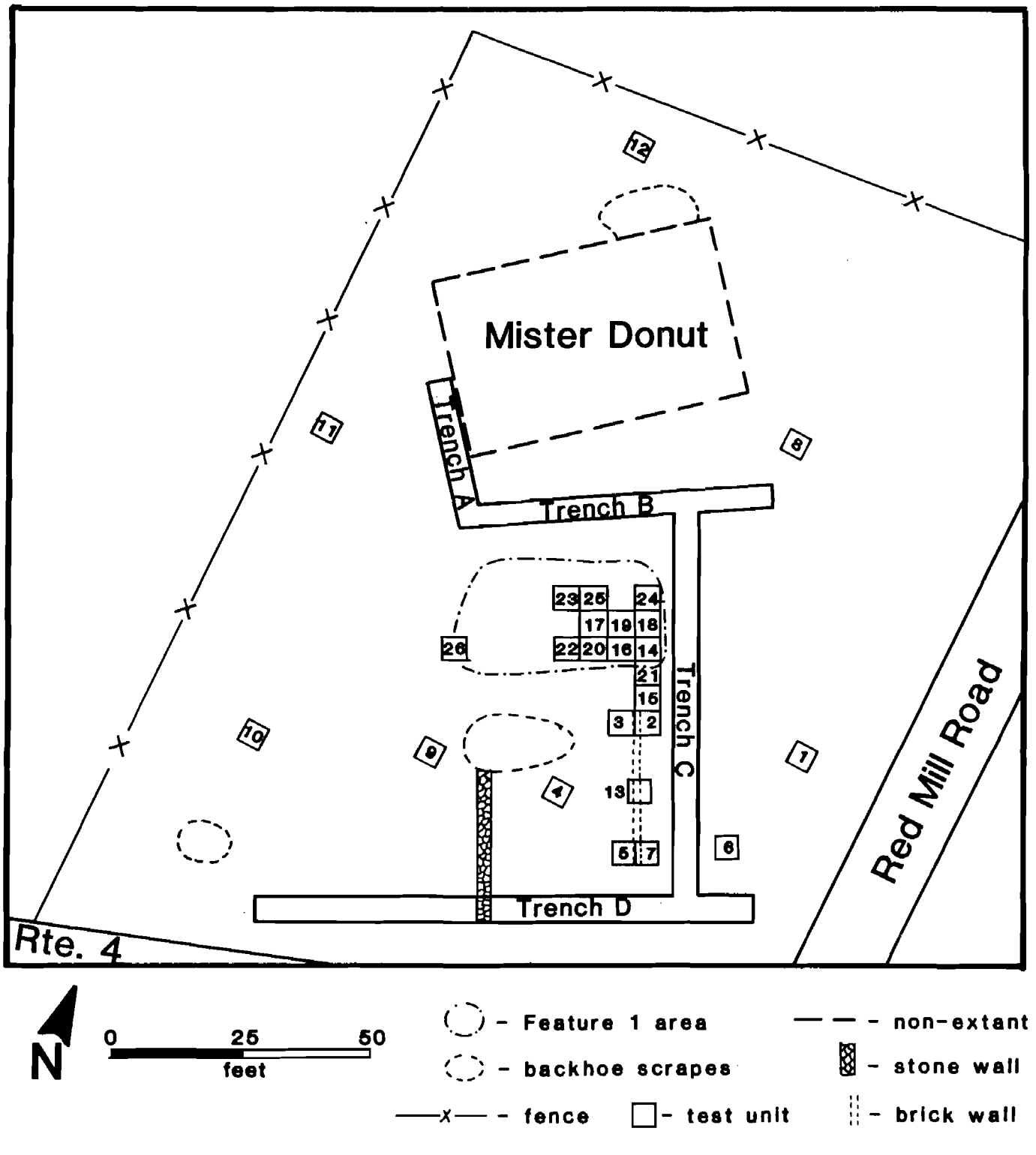
CRS NUMBER: N-10892

LOCATION DESCRIPTION: The John Ruth Inn Site is located on the northwest corner of the intersection of Red Mill Road and Route 4/273 (Figures 2 and 13). The William H. Heisler Tenancy House Site (N-10893) is located across Red Mill Road from the John Ruth Inn Site.

PHASE I SURVEY METHODS: The John Ruth Inn Site was not located or identified by the initial Phase I survey of Thomas (1980). Archival research associated with this Phase I survey identified the location to be the site of a structure constructed ca. 1790 as a residence, and altered in the early 19th century to function as a tavern and inn (Coleman and Custer 1985). The structure served as the social and economic center for the surrounding community until the late 19th century. Phase I testing consisted of the excavation of 13 5'x5' units placed as to areally sample the site and to test the integrity of the deposits associated with the house foundation, a late 19th-early 20th century blacksmith/wheelwright shop, a series of sheds/barns, and the side and rear yard areas. Prior to this unit excavation, a backhoe was employed to strip off an 8" thick asphalt and gravel layer that represented the parking lot of the former Mister Donut occupation.

FIGURE 13

John Ruth Inn Site N-10892, 7NC-D-126



The results of this testing showed that a large area of the western part of the site, including the location of the blacksmith shop, a granary, and several sheds had been totally dstroyed during the emplacement of a sewer line. The eastern yard area also exhibited utility disturbance through the emplacement of a major interstate gas line. The northern areas of the site were found to contain a 8-10" deposit of mixed topsoil; a result of plowing in the northernmost site areas and demolition and reconstruction in the rear yard areas. The bottom one-half of the main house foundation was found to be intact, the western one-third containing a full basement. Ground surfaces surrounding this foundation showed that during demolition all the original soil had been removed down to sterile subsoil and the surface subsequently leveled through the deposition of demolition debris mixed with the original topsoil. The rear (north) wall had been destroyed during the demolition process. Interior walls were found to be partially intact, but all the associated artifact deposits had been removed during demolition. In general the results of the Phase I testing showed little in the way of intact deposits in the areas tested.

PHASE II SURVEY METHODS: Backhoe excavation was employed to further define the integrity of archaeological deposits within the site. This testing consisted of the excavation of four trenches placed mainly within the eastern site area (Figure 13). Additional small backhoe scrapes were placed within the blacksmith/wheelwright shop, adjacent to the Mister Donut foundation, and along the rear wall of the main house foundation in order to obtain deeper profiles of the disturbance (Figure

13).

Trench A showed that in a 15' wide area adjacent to the concrete block footings of the Mister Donut structure deep disturbance was present with no possibility of the presence of intact cultural deposits. Trench B, which provided an east west transect across the rear yard area, showed a mixed and disturbed topsoil horizon on the eastern end with the disturbance level increasing westward. This trench did locate a series of concrete-lined postholes which from photographs taken ca. 1955 are shown to form the northern boundary of the yard area. Trench C, providing a north-south transect of the same area, located a deep trough-shaped midden feature extending approximately 15'north-south along the western wall of the trench. The bottom of the feature was defined by a one-half inch thick layer of charcoal. The midden fill soil was a dark brown sandy loam. Trench C also located the rear wall of the main house full basement section. Trench D further defined the front foundation wall and the integrity of the associated artifact deposits. The western end of the trench verified previous opinions on the extensive disturbance in that area. The western one-half of the trench revealed a 10" thick level of buried topsoil which showed obvious signs of mixing during the demolition process. The small backhoe scrapes (Figure 13) confirmed the completely disturbed nature of the blacksmith shop area and the fact that an 8' deep hole 20' x 10' had been excavated at the northwest corner of the main house foundation and later filled with large debris created during the demolition process.

In order to better define the vertical and horizontal extent of the feature located by Trench C, 7 additional 5'x 5' units were excavated. The results show that the feature is a well-stratified, approximate three foot thick deposit containing an artifact assemblage dating to the mid-18th century. An especially high percentage of animal bone and clay pipe fragments were also noted. In addition to the first located feature, other intact 18th century deposits (postholes with molds, barrel-lined privy holes) exist in a 35' E-W x 30' N-S area (Figure 13).

DISCUSSION OF RESULTS: The vertical and horizontal extent of the midden feature located in the Phase II research is indicative of a filled storage pit or cellar hole. The large amount of mid-18th century artifacts suggests this feature complex is not related to the John Ruth occupation of the site as a tavern. It is probable that the archaeological deposits are related to Thomas Ogle's ownership of the parcel, and are derived from activities related to location of an inn owned and operated by Thomas Ogle in the mid-18th century (Coleman and Custer 1985). If this is true, the investigations at the John Ruth Inn Site could generate data for comparative studies of taverns in the vicinity, particularly the Rising Sun Tavern in Stanton (Thompson and Gardner 1986) and the Mermaid and Tweed's Tavern on Limestone Road (Catts et al. 1986). A comparative study of these taverns would yield valuable information concerning taverns and their place in the overall socio-cultural landscape over time. In addition, the data could be compared to other 18th century tavern sites previously excavated (Rockman and Rothchild 1985), in order to determine its place on the urban-rural continuum.

NATIONAL REGISTER ELIGIBILITY: The John Ruth Inn Site is considered eligible to the National Register under Criterion D, as it has and is likely to yield valuable information concerning the function within the cultural landscape performed by an 18th century inn. The artifact assemblage derived from the site will also provide otherwise unobtainable data on the degree of urbanization of Ogletown in the 18th century. The artifact assemblage and patterning can also be compared to that from the Whitten Road Site (7NC-D-100), a mid-18th century farmstead located three miles to the south.

IMPACT: This site is located within the direct impact zone of the proposed ROW alignment of the project.

RECOMMENDED MITIGATION ALTERNATIVES: Data recovery is the recommended mitigation alternative for the site if avoidance is not possible. Presently, avoidance or preservation in place are not feasible alternatives, due to the site's location at the intersection within the direct impact zone.

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APPENDIX I

PROPOSED PHASE I AND II ARCHAEOLOGICAL RESEARCH PROGRAM WITHIN THE PLANNED OGLETOWN INTERCHANGE, NEWARK, DELAWARE

PROPOSED PHASE I AND II ARCHAEOLOGICAL RESEARCH PROGRAM WITHIN THE PLANNED OGLETOWN INTERCHANGE, NEWARK, DELAWARE

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The purpose of this report is to outline the research strategy to be used to complete Phase I field reconnaissance surveys and the Phase II determination of eligibility studies within the Ogletown project area. This discussion will include summary statements on the identification and significance of historic and prehistoric resources located by the initial Phase I survey conducted by Thomas (1980), the location and significance of other historic cultural resources known from recent archival research, and the archaeological methods to be employed in the field reconnaissance and determination of eligibility of all cultural resources within the project area.

The proposed project design involves the construction of roadway improvements in Ogletown, White Clay Creek Hundred, New Castle County, Delaware (Figure 1). The proposed action will involve about one mile of reconstruction and widening of Route 4. Also involved will be improvements to realign and rebuild the intersecting roads that presently share use of Route 4. The proposed project will realign just under one mile of Route 273, approximately one-half mile of Ruthby Road and about 500' of Salem Church road. A major impact will be the construction of a four-lane grade-seperated structure and associated roadway carrying Route 273 over Route 4. Figures 2 and 3 show the two proposed design concepts for the project, the Basic Alternative and the Modified Alternative. The present cultural resource survey will provide location and identification information on the cultural resources within the area impacted by the Modified Alternative.

FIGURE 1
Project Area

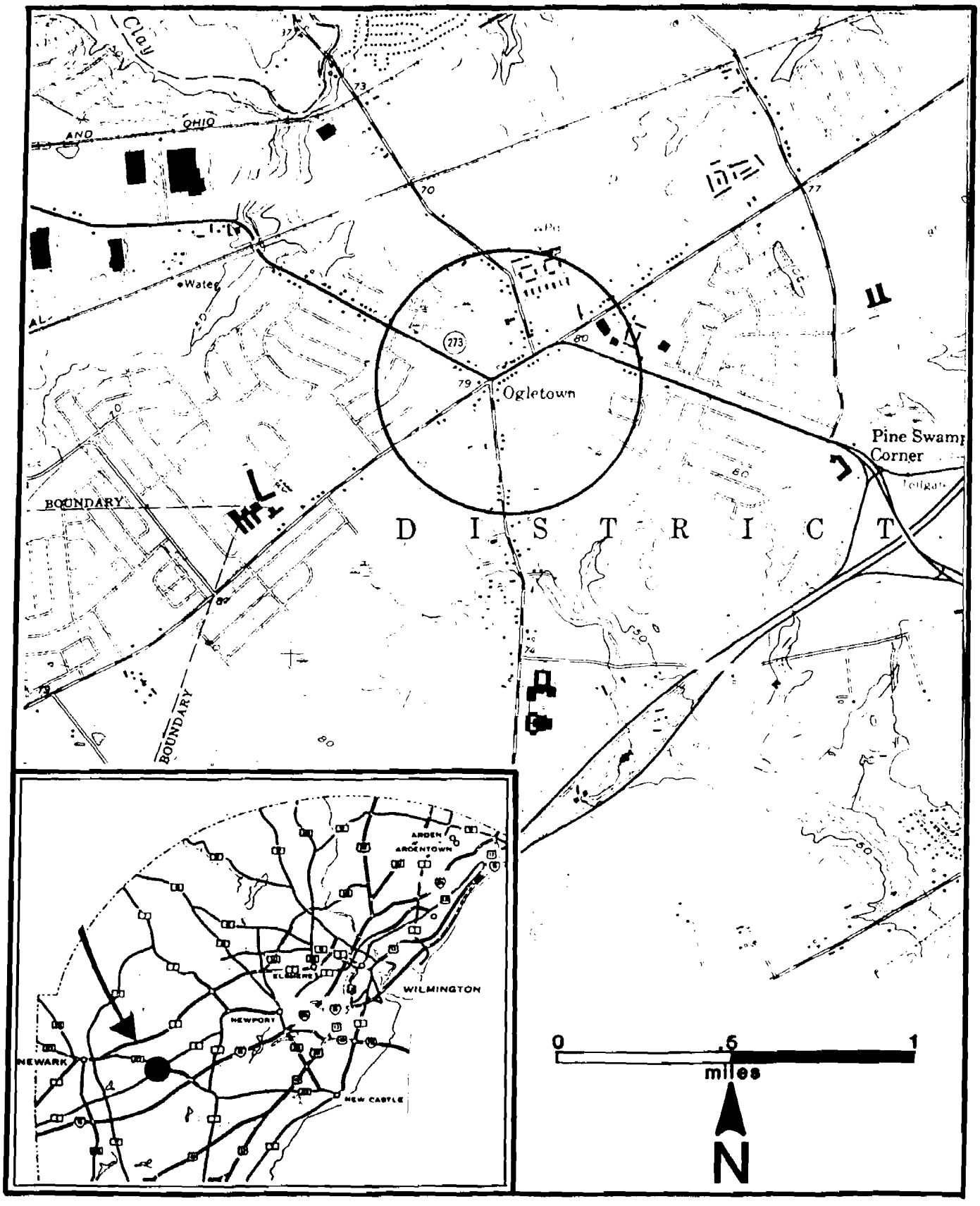


FIGURE 2

Basic Alternative Design Plan

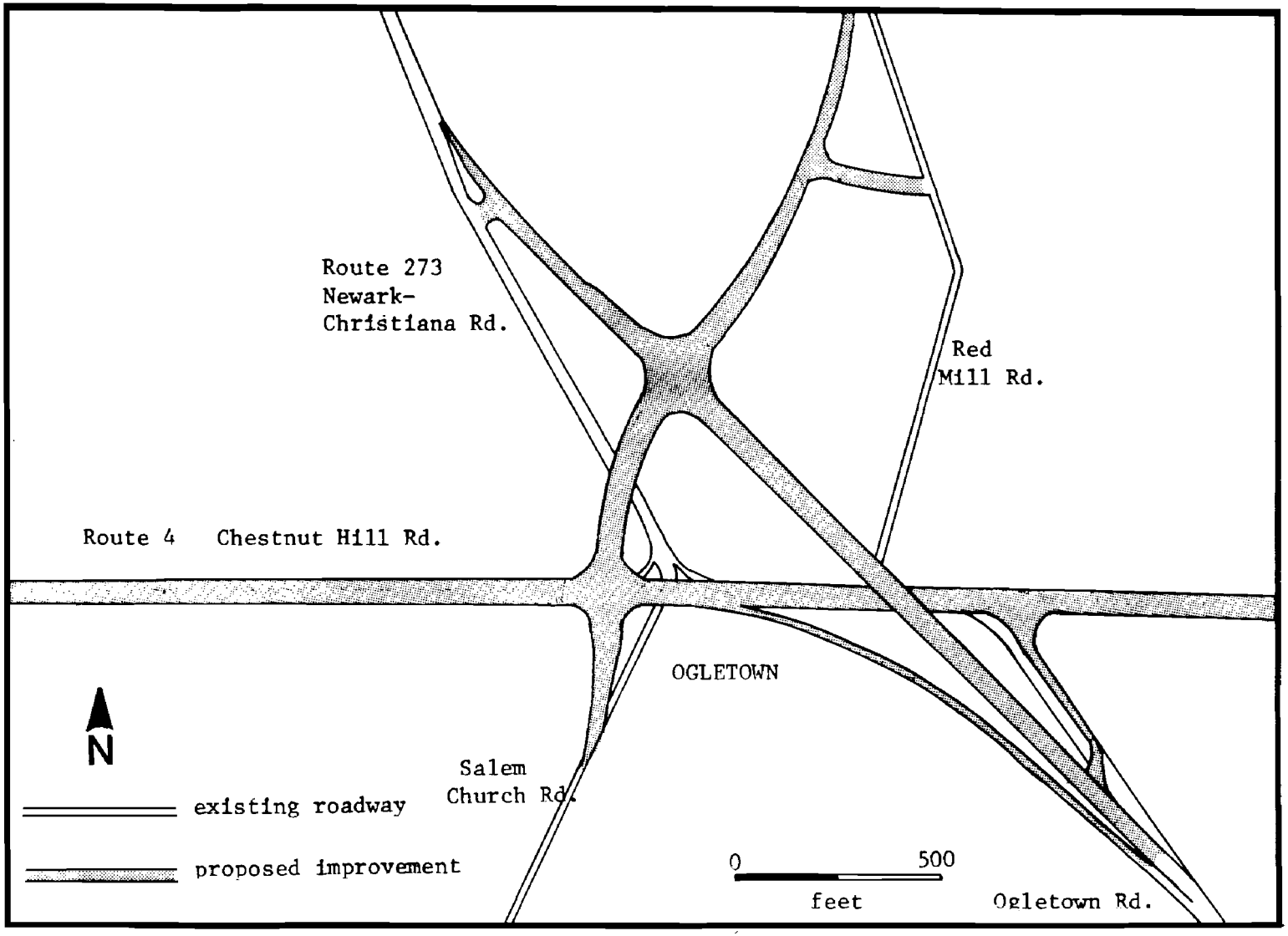
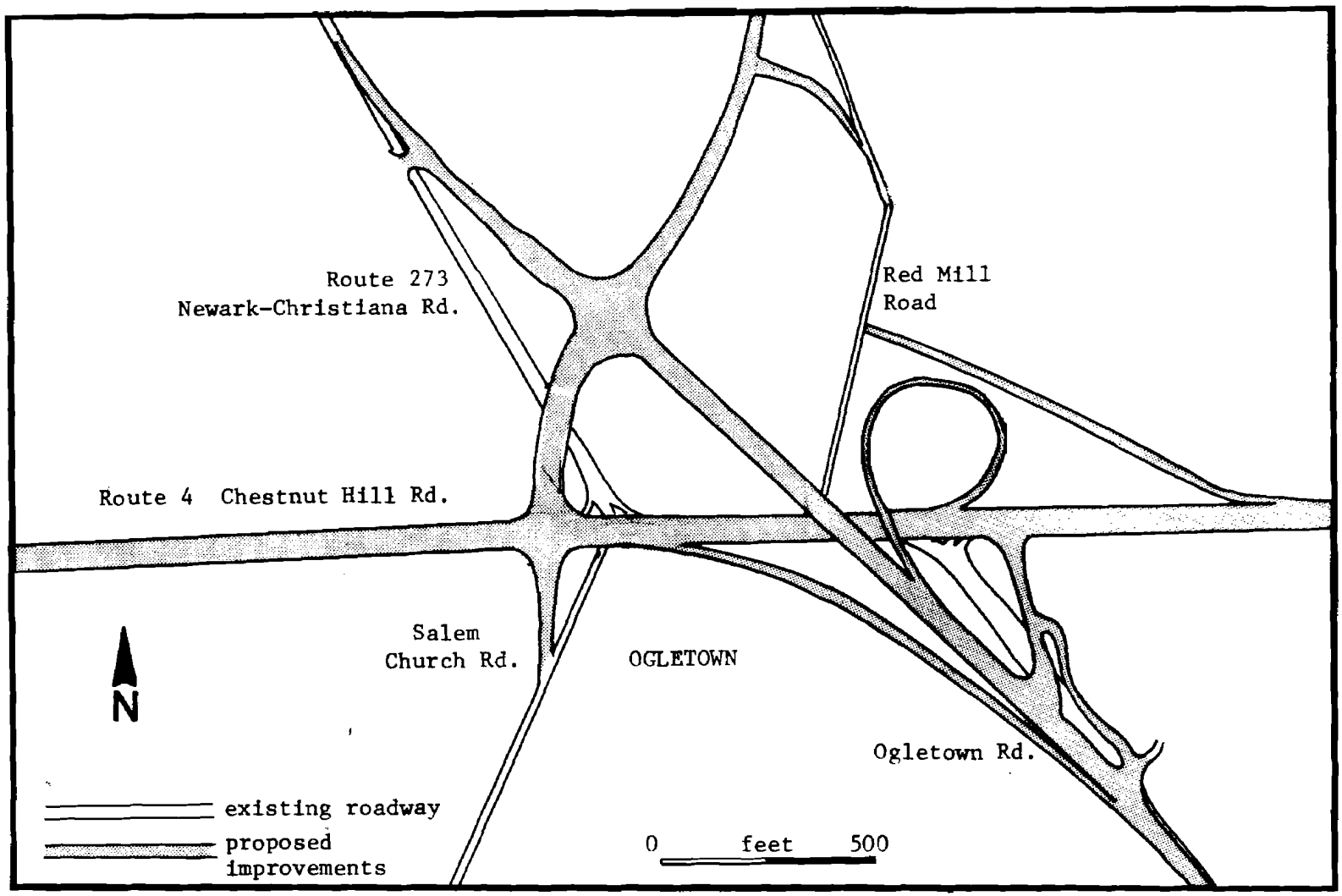


FIGURE 3

Modified Alternative Design Plan

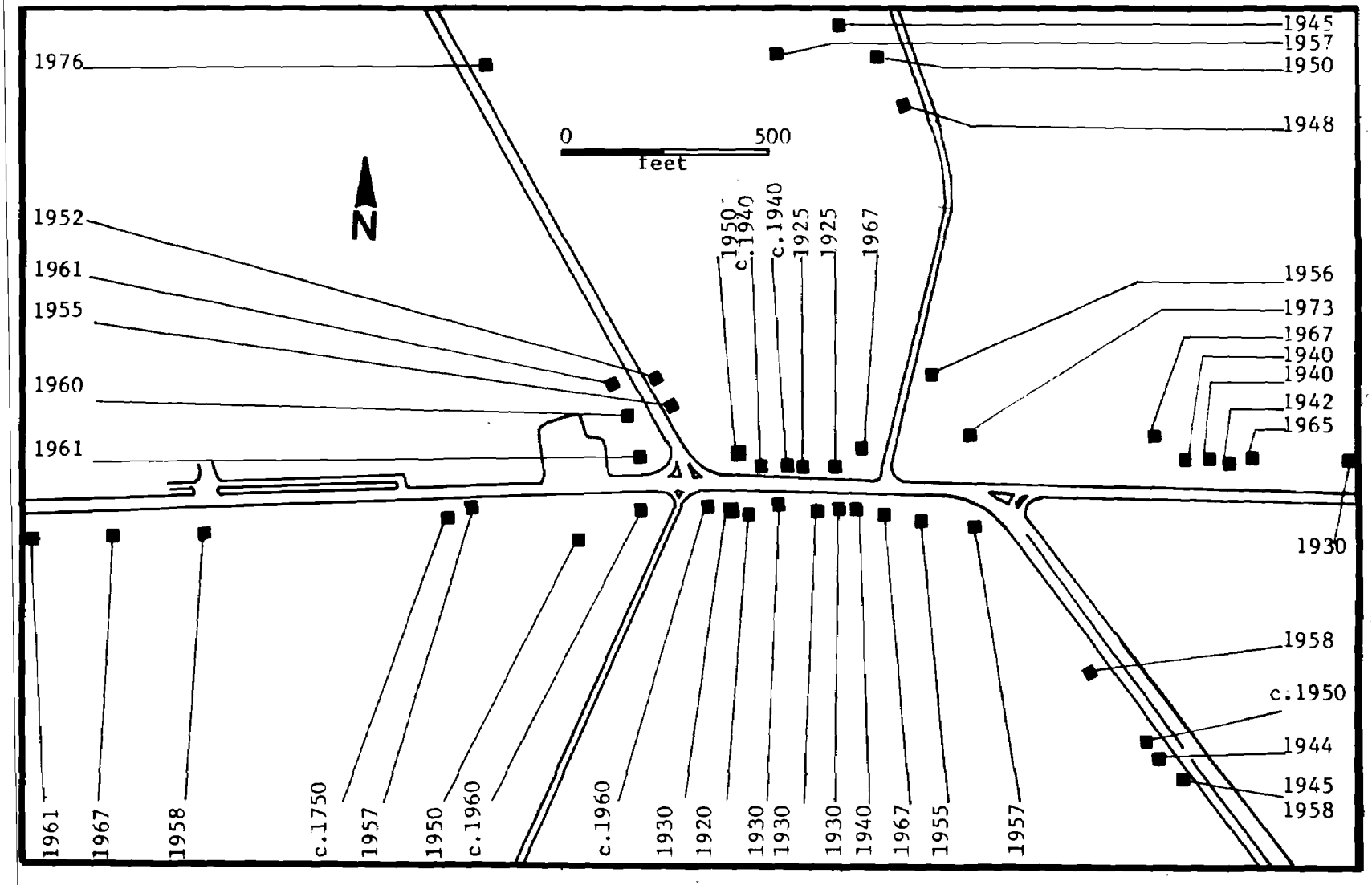


Since its conception in the late 1970's the Department of Transportation has been actively involved in the acquisition of right-of-way within the project area. Their actions have consisted of the purchase of vacant and occupied land and the destruction of the structures occupying the properties. Most of this activity occured in 1973-75 and involved properties shown in Figure 4. The date of construction of the dwellings demolished by DOT are also shown on the figure, ranging from the Red House plantation site, constructed in the mid-to-late 17th century to gas stations constructed in the late 1950's. As can be seen a majority of the houses were constructed ca. 1925-1940. According to the demolition specifications, the demolition of these structures should not have caused extensive disturbance to any associated archaeological deposits.

As a part of the preliminary design planning for the Ogletown improvements, Mid-Atlantic Archaeological Research (MAAR) was contracted by the DOT to perform a location and identification survey of the area to be affected by the planned project. Thomas (1980) used the following research methods in this initial study. "Archival research was conducted to identify sites of archaeological resources of the historic period. Those standing historic structures previously identified by the Bureau of Archaeology and Historic Preservation as culturally significant were not subjected to further research except when it was necessary to identify periods of occupation for interpretation of recovered artifactual data. Basically, archival research can be equated with map research" (Thomas 1980: I-3). The next step was a field survey begun after the completion

FIGURE 4

DOT Property Parcel Map with Building Construction Dates



of a background study of known archaeological resources and environmental parameters. The study of environmental parameters was used to develop a predictive model for the location of prehistoric archaeological resources. The predictive model developed by Thomas for the project assumed that the occupation of sites was based primarily on soil drainage characteristics. Prehistoric sites would most likely be expected in well-drained areas adjacent to freshwater sources and resource procurement areas. Based on the background research the project area was subjected to a vehicular survey followed by a pedestrian survey covering 100% of all exposed ground surfaces. Subsurface testing consisted of the excavation of post hole tests and where appropriate, measured test units. This subsurface testing was designed to provide additional information to properly evaluate the significance of the identified resources. The final stage of the investigations consisted of an analysis of the identified cultural resources for the purpose of identification of the resources and assessing or evaluating their significance in terms of their National Register eligibility. Unfortunately, the final product of this survey was neither comprehensive in scope nor conclusive in terms of National Register eligibilities.

For organizational purposes Thomas divided the Ogletown project area into two segments, D and E (Figures 5 and 6). Within Segment D in the project area, Locus D-6 (7NC-D-68) was located on the south side of Route 4 approximately one quarter mile west of the intersection of Route 4 with Route 273 (Figure 7). Observed at the ground surface was a rubble-lined 20 by 25

FIGURE 5

MAAR Project Location–Segments B, C, and D

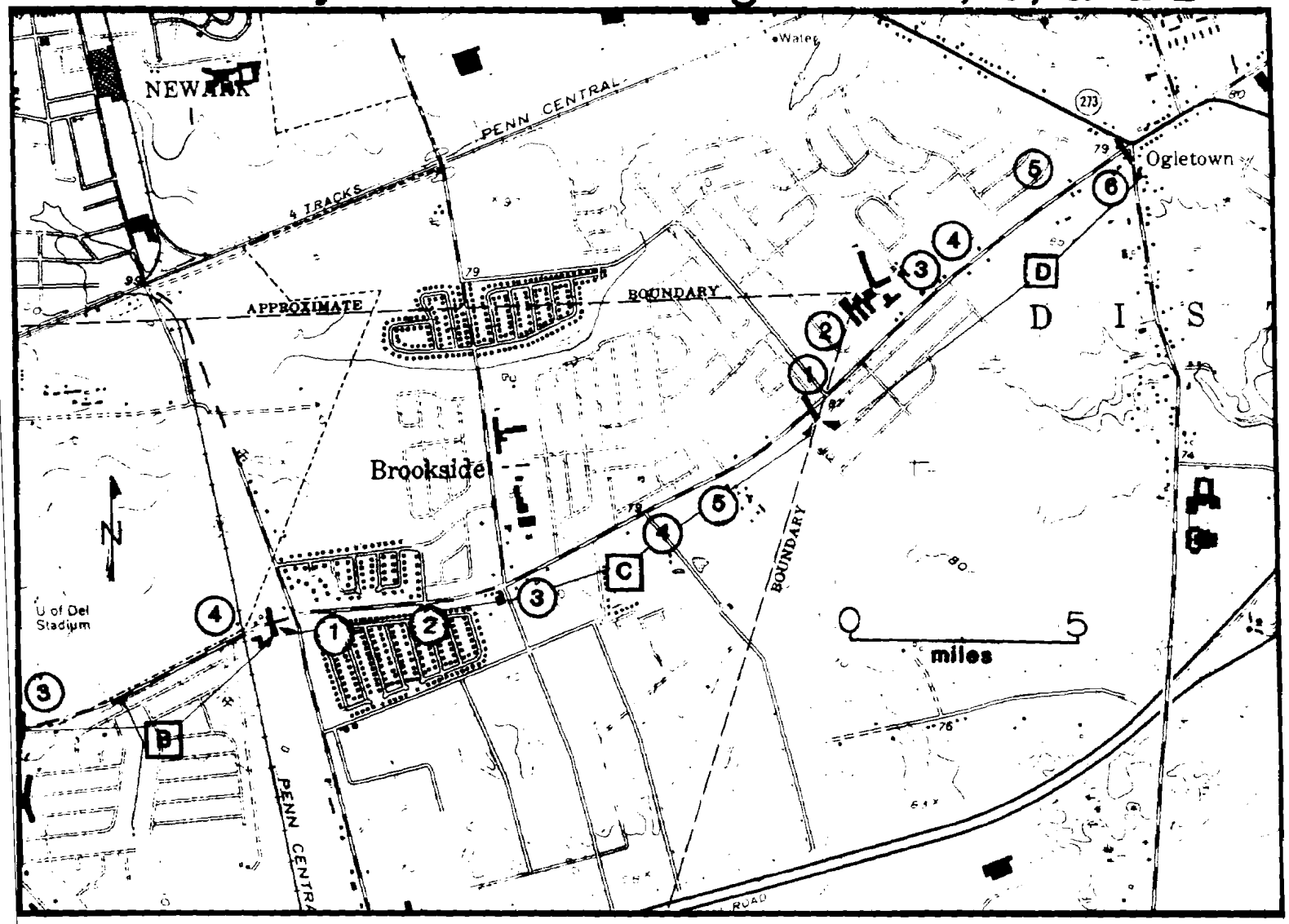


FIGURE 6

MAAR Project Location–Segments E, F, and G

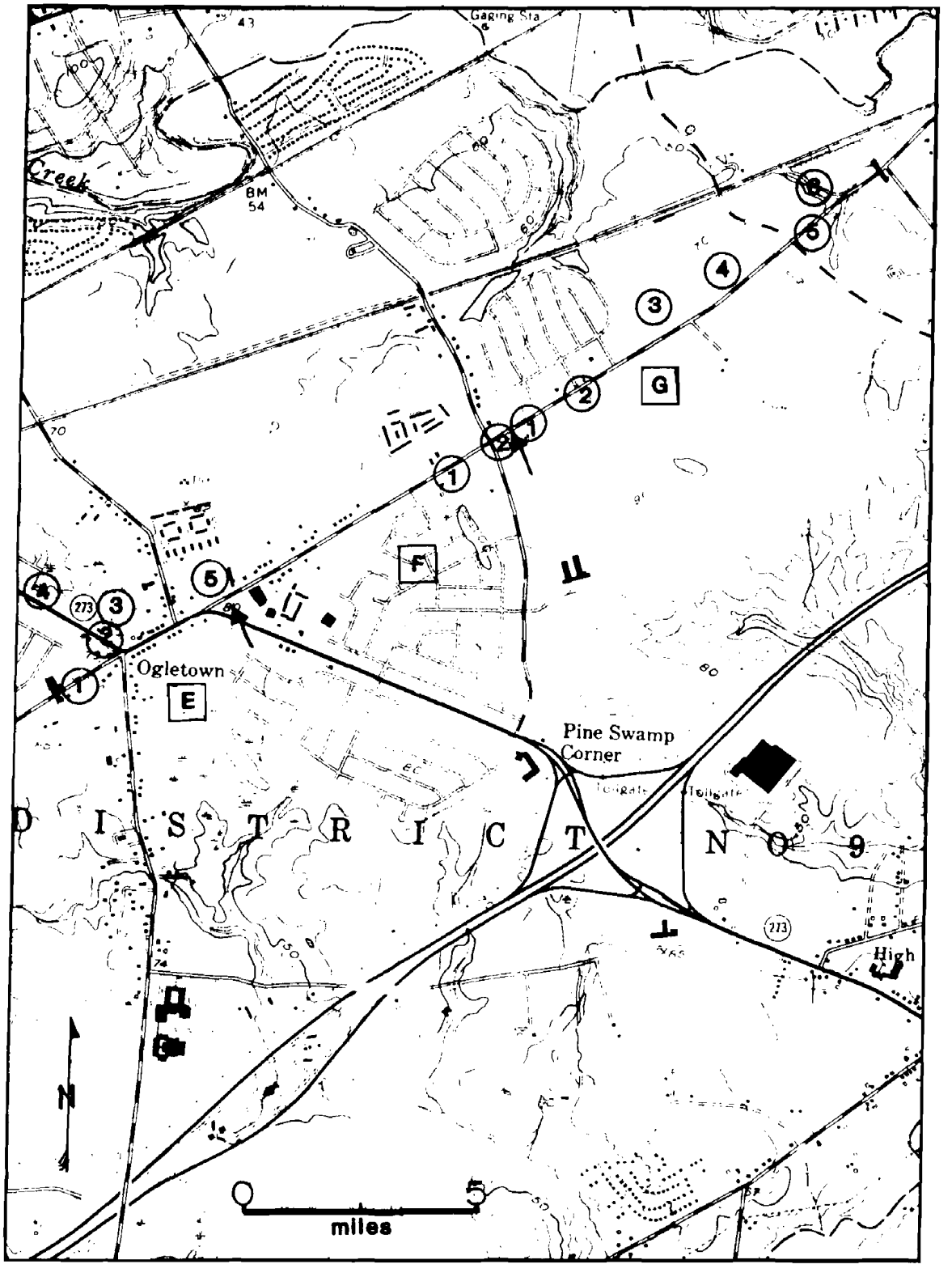
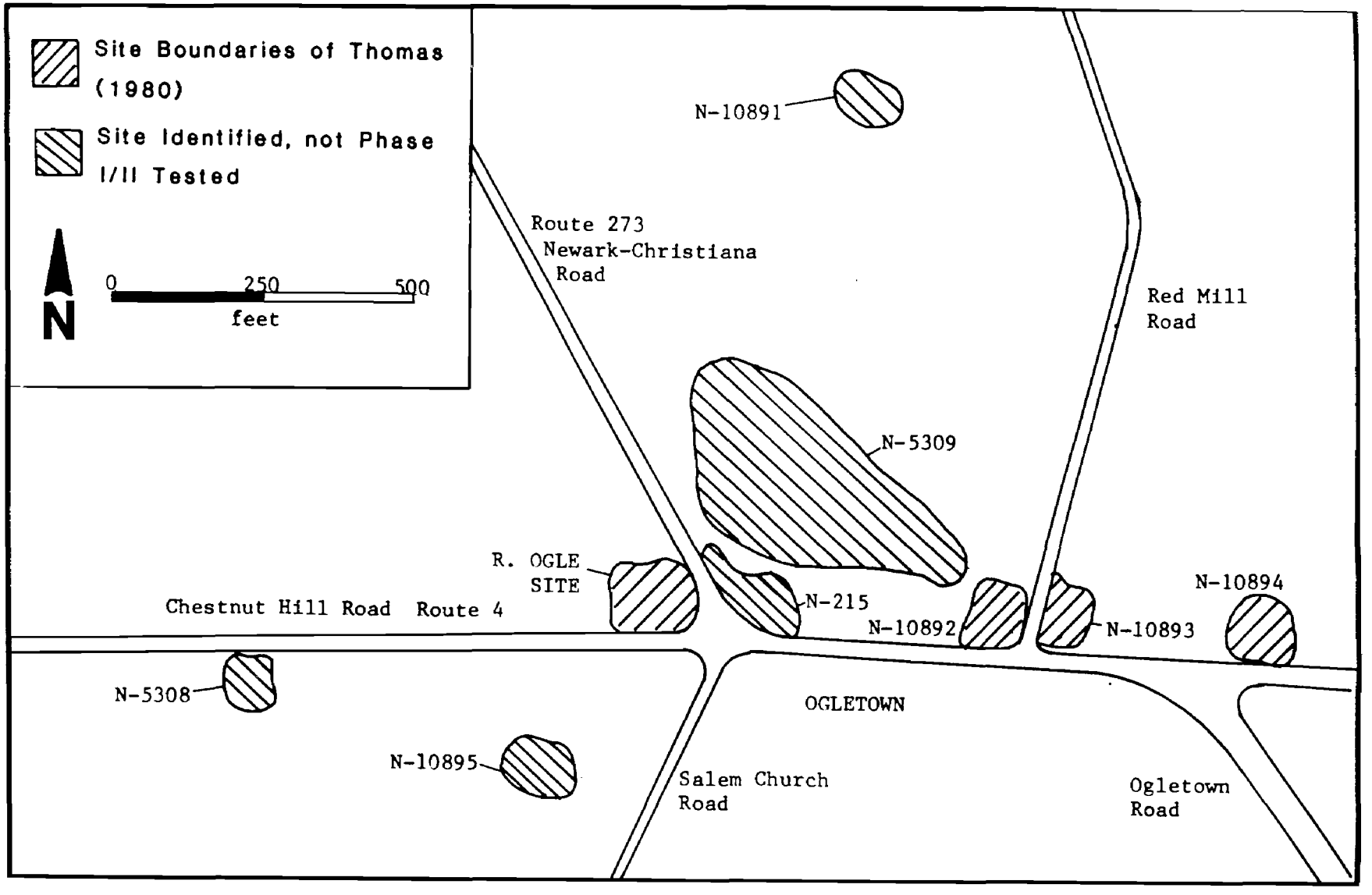


FIGURE 7
Cultural Sensitivity Areas



foot cellar hole/foundation, a brick-lined well to the southeast of the foundation, and a variety of artifacts. The owner of the property restricted access to the property and no subsurface testing was carried out. This locus, known as the Temple property, was determined by Thomas to have been the site of a log cabin which was razed in the late 1950's for highway construction. According to the owner, the removal of the structure was done in a way so that little ground disturbance occured. Thomas (1980:VI-8) recommended that "unless a prudent and feasible alternative can be found, data recovery operations be initiated at the Locus. Data recovery should be thorough and should consist of the excavation of the cellar hole, all subsurface features, and any middens located." The limited historical research that was accomplished associated with this survey indicated that the site was occupied by at least 1849 when it was owned by Forman as shown on the Rea and Price Map of New Castle County (1849).

Additional historical research indicates that this locus was the site of a plantation, historically called the Red House plantation, located within the southwestern section of a 745 acre tract patented by Thomas Ogle in 1739. The survey plat accompanying the warrant for the parcel shows the location of two existing improvements (dwellings) within the platted area. One of these is in the same location as the red house plantion (Locus D-6), is labeled as "the improvement sold Thomas Ogle by Jacob Rogers." Thus, the archaeological deposits associated with the site should yield artifacts and features dating to the early 18th century and possibly to the late 17th century. A property

appraisal of the Red House associated with the settlement of Thomas Ogle's estate in 1774 lists "an old house out of repair." Thomas Ogle in his will dated January 27, 1768 bequeathed to his wife Catherine the house known as the Red House in Ogletown together with two hundred acres of land to be laid off from the home tract. The two hundred acre parcel including the house site remained intact until a division sale in the late 1940's. During the ownership of the present owner, Mr. Albert Temple, in conjunction with a road widening project of Route 4 (contract number 1154) it was suggested that the house be moved intact to a new foundation to the south of the existing site. Instead, a decision was made to destroy the house and this was accomplished in early 1954. The house site has remained undisturbed since this demolition and is presently completely covered with a dense vegetation. Several additional archaeological features have been located during preliminary walkovers and limited subsurface augering indicates that the area surrounding the house is unplowed.

From Figures 2 and 3 it can be seen that the present project as proposed will significantly impact the site of the former Red House plantation. Because of the high level of significance indicated by the preliminary research and the relatively undisturbed nature of the archaeological remains, an extensive Phase II excavation will be undertaken. This will consist of the construction of a detailed site map including the house foundation, well, barn foundations, and other features observable on the surface. Following this, a grid will be placed

over the site and shovel postholer tests will be excavated to sterile soil at five foot intervals. Any features located during this testing will be exposed to assess their integrity and size. The integrity of the basement area within the foundation will be assessed by the excavation of two test units, one placed at a corner of the foundation and the other located centrally within the structure. Additional three by three and five by five foot test units wiil be excavated where surface indications warrant or where the shovel tests yield results to suspect the location of buried features. In conjunction with this archaeological testing, additional historical research will focus on determining the significance of the site within the local and regional historic environment. On the basis of the archaeological and archival research the site's eligibility for listing in the National Register will be determined. It is anticipated that completion of the Phase I/II research at this locus will take approximately one month to complete.

Within Locus E (Figure 6) five archaeological sites were located by the survey of Thomas(1980). A prehistoric locus, E-1 was located in a garden site on a slight rise of land southwest of the intersection of Route 4 and Salem Church Road (Figure 7). Because the site had been reported by a local informant to have yielded numerous prehistoric artifacts, both surface and limited subsurface examination (five post-hole tests) were undertaken. The results from this testing provided no indication of prehistoric occupation. Thomas concluded that "there will be no impact to cultural resources at this locus" (Thomas 1980:XI-9). In order to assure that no prehistoric resources are present at

this locus additional work at this locus will be undertaken to locate and identify the reported cultural resources. The area contained by the site is presently covered by a combination of brush, grass, and tree cover with limited surface visibility. The proposed research will include additional informant interviewing of local collectors, an intensive surface reconnaisance of the ground surface where visibility permits, and subsurface testing across the site to locate and identify the site. If the preliminary testing recovers sufficient artifact densities, further testing will be carried out to determine the integrity, size, and occupation period of the site. Determination of the site's eligibility for listing on the National Register will be completed. It is expected that Phase I testing at this locus will take approximately one week.

Locus E-3 was a site located on a rise of land overlooking several wetland woods just to the northeast of the intersection of Routes 4 and 273 (Figure 7). Informants had reported that dozens(?) of finished artifacts had been collected from this knoll in the past. At the time of the survey the visibility of the area was good and further subsurface testing was also carried out, both with negative results. Artifacts recovered from this locus (7NC-D-69) consisted of one fire-cracked rock, one quartz fragment and two whiteware sherds. Thomas (1980) recommended that further work be carried out at this site should this rise of land be incorporated in the future interchange construction program. Because of the significant impact to the site by the proposed project (Figure 7), the present research will conduct a complete

Phase I/II survey within the supposed site boundaries. At present, surface visibility of the site is very low with over 80% of the site in heavy forest and the remaining area in fallow agricultural fields. The testing strategy in these unsurveyed areas will consist of an unaligned systematic testing program within the 700 foot long and 150 foot wide right of way through the site area. The remaining right of way through the heavily wooded area will be examined through the excavation of measured excavation units placed at regular intervals and at other locations predicted to contain prehistoric sites based on previous research in northern Delaware (Custer 1983). Within the forested area the numerous bay/basin features surrounded by well-drained sandy rises will be throughly examined for signs of prehistoric occupation. Phase I testing of the proposed ROW within 7NC-D-69 will take approximately two weeks, with another two weeks for the testing for the 1200 foot length of ROW for the Salem-Ruthby Road connector through the same forested parcel.

Locus E-4 was on a small heavily wooded rise located along Route 273 and was predicted by Thomas's model to be a possible location of prehistoric occupation (Figure 7). A total of four shovel tests were excavated at this locus and this subsurface testing at the site yielded negative results and no further work was recommended. To insure that no cultural resources are present further field reconnaissance testing employing measured excavation units will be carried out because this locus will be directly impacted by the present project. Methods employed in the initial field reconnaissance and the follow-up Phase II research will be similar to those used at other prehistoric sites

in the project area.

Locus E-5 was another site location predicted by the prehistoric model to possess a high probability of containing prehistoric artifacts (Figure 7). Subsurface testing at this locus consisted of the excavation of eight post-hole tests with negative results. It was determined from this limited testing that no cultural resources existed at this locus. Since the time of this preliminary survey archaeological excavation this site has been severely impacted by Route 4 road construction and no further work will be undertaken at this locus.

The most significant locus investigated by the Thomas survey was Locus E-2, the Thomas Ogle Site (Figure 7). The site, located at the northeast corner of the intersection of Routes 4 and 273 was subjected to subsurface archaeological testing to determine if significant archaeological remains existed to necessitate archaeological mitigation procedures. Included with this research was the interviewing of local informants to establish the location of outbuildings and other features associated with the site. The subsurface excavation consisted of the establishment of a ten foot grid system and the excavation of 97 post-hole tests. The artifacts recovered from this testing are listed in Table 1 and the location of the post-hole units and the artifact counts recovered from each are listed in Figure 8. Also shown on the figure are the location of the main house foundation, well, chicken coop, and cemetary known from informant interviews. The archaeological testing revealed that a concentration of artifacts can be expected adjacent to the rear

FIGURE 8

Ogle House Test Grid–MAAR 1980 Excavation

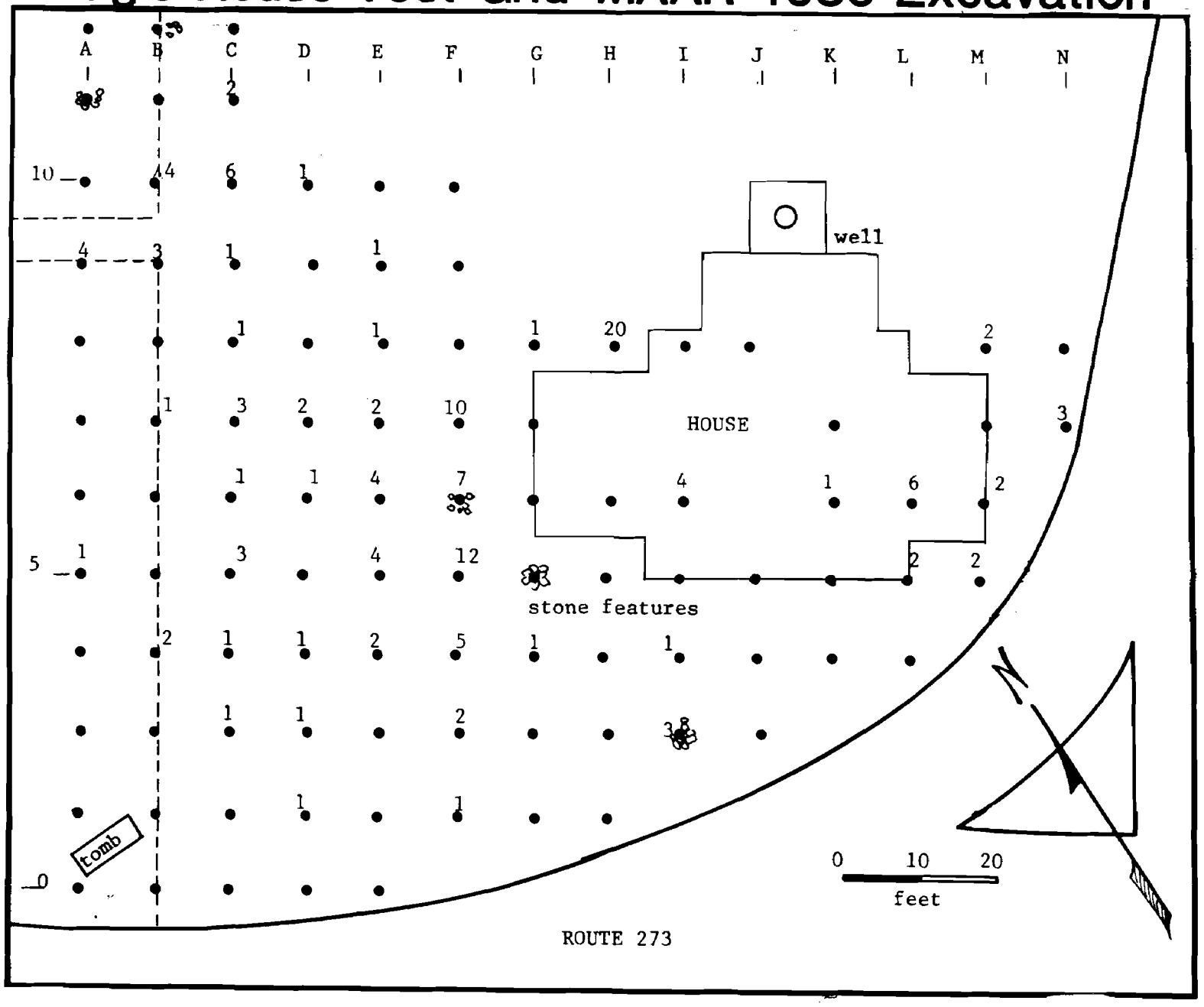


Table 1

General Artifact Inventory

Area Location

DOT - Thomas Ogle House
Historic Artifacts

Catalog #		
# TO- 1	(A-5)	1 redware sherd
# TO- 2	(A-9)	3 redware sherd; 1 bottle glass frag.
# TO- 3	(B-4)	2 whiteware sherds
# TO- 4	(B-7)	1 brick fragment
# TO- 5	(B-9)	3 bone fragments
# TO- 6	(B-10)	1 whiteware sherd; 3 wire fragments
# TO- 7	(C-3)	1 whiteware sherd
# TO- 8	(C-4)	1 whiteware sherd
# TO- 9	(C-5)	2 nails
# TO-10	(C-8)	1 whiteware sherd
# TO-11	(C-9)	1 redware sherd
# TO-12	(C-10)	6 whiteware sherds
# TO-13	(C-11)	1 whiteware sherd; 1 redware sherd
# TO-14	(C-12)	1 metal fragment
# TO-15	(D-2)	1 redware sherd
# TO-16	(D-3)	1 porcelain button
# TO-17	(D-4)	1 nail
# TO-18	(D-6)	1 redware sherd
# TO-19	(D-7)	1 porcelain sherd; 1 redware sherd
# TO-20	(D-10)	1 bottle glass fragment
# TO-21	(E-4)	1 brick fragment; 1 redware sherd
# TO-22	(E-5)	1 creamware sherd; 3 whiteware sherds
# TO-23	(E-6)	2 creamware sherds; 1 whiteware sherd
# TO-24	(E-7)	1 pearlware sherd
# TO-25	(E-8)	1 whiteware sherd; 1 wire fragment
# TO-26	(E-9)	1 plastic fragment
# TO-27	(F-2)	1 redware sherd
# TO-28	(F-3)	1 bottle glass fragment; 1 horseshoe fragment
# TO-29	(F-4)	3 whiteware sherds; 2 bottle glass fragments
# TO-30	(F-5)	8 whiteware sherds; 2 redware sherds; 2 nails
# TO-31	(F-6)	1 bottle glass fragment; 1 flat glass fragment; 4 nails and 1 wire fragment
# TO-32	(F-7)	10 bottle glass fragments
# TO-33	(G-4)	1 bottle glass fragment
# TO-34	(G-8)	1 bottle glass fragment
# TO-35	(H-8)	19 whiteware sherds; 1 redware sherd
# TO-36	(I-3)	2 flat glass fragments; 1 nail
# TO-37	(I-4)	1 bottle glass fragment
# TO-38	(I-6)	1 redware sherd; 3 bottle glass fragments

# TO-39 (I-8)	1 metal spike
# TO-40 (K-6)	1 flat glass fragment
# TO-41 (L-5)	1 pearlware sherd; 1 bottle glass fragment
# TO-42 (L-6)	2 whiteware sherds; 1 redware sherd; 1 bottle glass fragment; 2 flat glass fragments
# TO-43 (M-5)	1 bottle glass fragments; 1 flat glass fragment
# TO-44 (M-6)	2 bottle glass fragments
# TO-45 (M-8)	2 whiteware sherds; 1 redware sherd
# TO-46 (N-7)	2 bottle glass fragments; 1 nail

of the house foundation and that several intact buried foundations exist scattered throughout the yard area. The soil profiles obtained from this testing showed a moderate amount of disturbance surrounding the outbuildings with lesser amounts of disturbance in the yard area. The stratigraphic profiles obtained from this testing indicate that within the house foundation, brick and stone rubble exist to an undetermined depth. This agrees with the demolition specifications of the DOT in the awarding of the demolition 1955 contract to the Wilmington Wrecking Company stating that "this house will be completely removed from the site. The building and sidewalls will be leveled to ground level. Plaster and debris may be used as cellar fill. However,this job will not include the filling of the cellar." The Ogle House was demolished in the Spring of 1955 and since that time the site has been unoccupied. The area surrounding the house has been partially impacted by the widening of the intersection and the emplacement of utility lines. A limited degree of unauthorized artifact looting has also taken place but this has been limited to metal detecting at relatively shallow depths. Thomas (1980) recommended that:

1) Extensive documentary research should be instituted in order to determine the land use history of the Ogle property and to allow for the interpertation of the archaeological record.

2) Archaeological data recovery operations should be instituted once the decision has been made to include the property within the construction ROW.

3) Data recovery should consist of mechanical removal of all overburden and the exposing of subsurface features indicated through documentary research and post-hole testing. Each feature should then be excavated.

Archival research conducted by Thomas (1980) determined that the site could have been occupied beginning with the purchase of land by Thomas Ogle in 1739 and that the house was later occupied by his son James Ogle.

Further research concerned with the Thomas Ogle site indicates a construction period for the house of circa 1740. Several travellers accounts of the 1740's mention Ogle's Town and the presence of a tavern run by Thomas Ogle. By the time of a 1762 account the house no longer functioned as a tavern although Ogle still boarded guests. The 1768 will of Thomas Ogle bequeathed to his son James "all the reversion of my large tract together with my mansion house and all the other buildings and improvements thereon." James Ogle's inventory (1794) includes reference only to a house with a front and back room and a two story kitchen.

Due to default of a mortgage to Peter LeMaigre, 250 acres and the dwelling out of the original 368 acre tract was sold at a 1795 sheriff's sale to John Dickinson of the Borough of

Wilmington. In a 1799 list of his estate the T. Ogle site was described as: The dwelling house of brick-two stories-about thirty two feet long, twenty seven feet wide-thirteen windows about five or six feet long, and three feet wide,-a kitchen of brick-one story-about fifteen feet square-a back building of wood about fifteen feet square-a barn of wood about thirty feet long and fifteen feet wide-a small log tenement. All the buildings last described are in runious state and inhabited only by poor persons who pay no rent."

Other notable and significant owners of the T.Ogle House and Plantation included George Read of New Castle (1800-1803), Nicholas Le Huray, who operated a clock-making business on the site from 1826 to 1834, and William Hawthorn, the owner during the circa. 1868 period when the house functioned as a hotel. Detailed site specific historic research has not been undertaken on the 19th and 20th century occupation of the site but preliminary findings indicate the existence of a wealth of documentary material. A series of photographs taken ca. 1955 (Plate 1) will be most useful when combined with the documentary information and informant interviews.

For reasons unknown the survey of Thomas (1980) failed to locate or identify either through map research or fieldwork several historic sites listed on historic maps of the area. The Rea and Price Map of New Castle County (1849) locates five additional historic sites within the project area: the Robert Ogle Site at the northwest corner of the Route 4 and 273 intersection; the John Ruth Inn at the northwest corner of the

PLATE 1

Thomas Ogle House, Front View, Ca. 1955

intersection of Red Mill Road and Route 4; the W.E. Heisler Site consisting of a tenant-occupied structure on the northeast corner of the previous intersection; the main house structure approximately 1000 feet to the east on the north side of Route 4, and School House #42, located on Ruthby Road 1400 feet north of the Route 4 intersection (Figure 7). One slightly more recent historic site, included on Beer's atlas of New Castle County (1868) the S. Morrison house, was also not identified or located as part of the 1980 research. The other historic site on Beer's Atlas, another S. Morrison house was found by the present deed research to have been located within the Ogletown Baptist Church property and will not to be impacted by the present project. Both of these mid-19th century structures are not extant, the S. Morrison house within the project area having been destroyed by the DOT in 1974 and the other house at some time during the late 1960's.

Three of the six historic sites not identified by Thomas are presently covered by an asphalt or concrete pavement. The other two, the W.E Heisler main house site and the Samuel Morrison site, now both now in vacant land have been impacted to an unknown degree by house demoliton activities. The Robert Ogle Site is now occupied by an Arco gas station, the John Ruth Inn formerly by a Mister Donut operation, and the W.E. Heisler tenancy site by a BP gas station. However, subsurface disturbance associated with the Mister Donut operation appears to be minimal, and Orphan's Court plats of the Robert Ogle and W. E. Heisler tennancy site show that the major subsurface disturbance associated with the emplacement of gas tanks occured away from

the main house foundation. The School House #42 site contains the extant schoolhouse structure, extensively modified, surrounded by 20th century structures associated with a small engine business. The rear yard area of the site, now lightly wooded, appears to be well preserved. The basic strategy to be employed in the excavation of the sites under the asphalt will include the removal of restricted areas of asphalt to test for the limits and integrity of the site. Specific excavation techniques will be identical to those employed elsewhere in the project area. Due to the real threat of looting and vandalism to the sites within the project area the initial phase II work will not expose large areas of the sites but will thoroughly test the site within its known limits. The other three sites will be subjected to Phase I/II excavation employing the use of measured units to determine the integrity of the site and shovel-post holer tests to locate features and determine site boundaries.

APPENDIX II

ADDITIONAL CULTURAL RESOURCE PLANNING DATA, OGLETOWN INTERCHANGE

ADDITIONAL CULTURAL RESOURCE PLANNING DATA, OGLETOWN INTERCHANGE

by

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INTRODUCTION

This report provides additional background cultural resource information on the proposed right-of-way (ROW) of an additional segment and a realignment of previously surveyed segments of the proposed Ogletown interchange project (Figure 1). The additional segments and realignments are located north of Ogletown and were added after the completion of the original 1986 planning study (Coleman and Custer 1986).

The results of the 1985 testing program were briefly discussed in a management plan prepared by the University of Delaware Center for Archaeological Research (UDCAR) (Coleman and Custer 1986). Based on a series of public hearings held during the winter of 1985/6, a new interchange concept was created. The major design change involved a realignment and lengthening of Route 273 which shifted the terminus from Ogletown Home Cooking to the Avon plant entrance approximately 3/4 mile northward on Route 273 (Figure 2). This necessitated the additional Phase I/II survey of approximately one additional mile of right-of-way. For organizational purposes this one mile of ROW was divided into Segments 4, 5, and 6. Previously unsurveyed areas also affected by this new design were included in a shift of the ROW alignment of Segment 2. This involved a westward shift at the RT. 273 crossing and an eastward shift in the Paradise Lane area (Figure 2). The previously surveyed Route 4/273 alignment, designated as Segment 3, was not changed although the creation of a frontage road will cause further impact to the previously identified A. Temple Site (7NC-D-68, N-5308) (Coleman and Custer 1986). The creation of an additional segment of ROW by the design change

FIGURE 1
Project Area

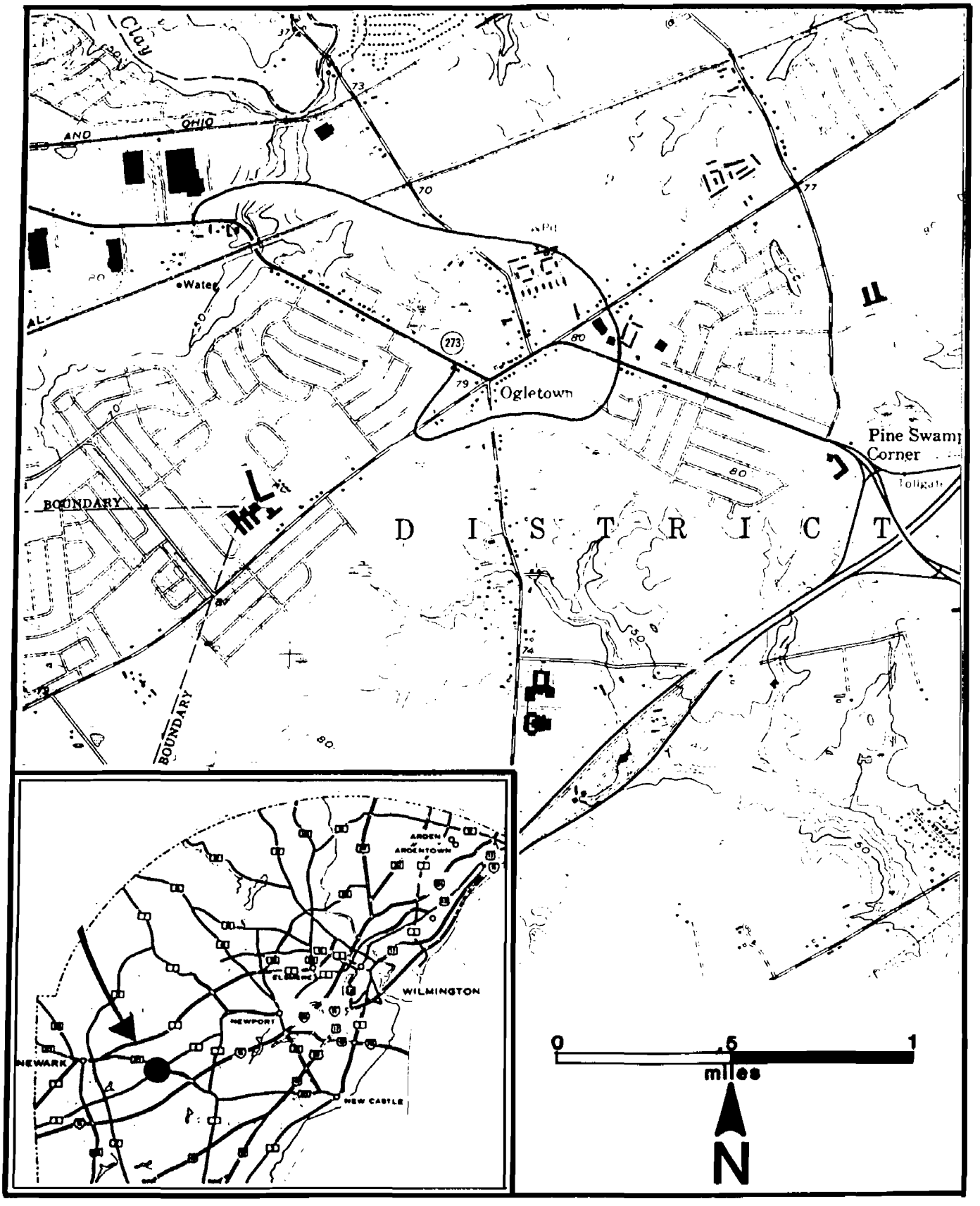
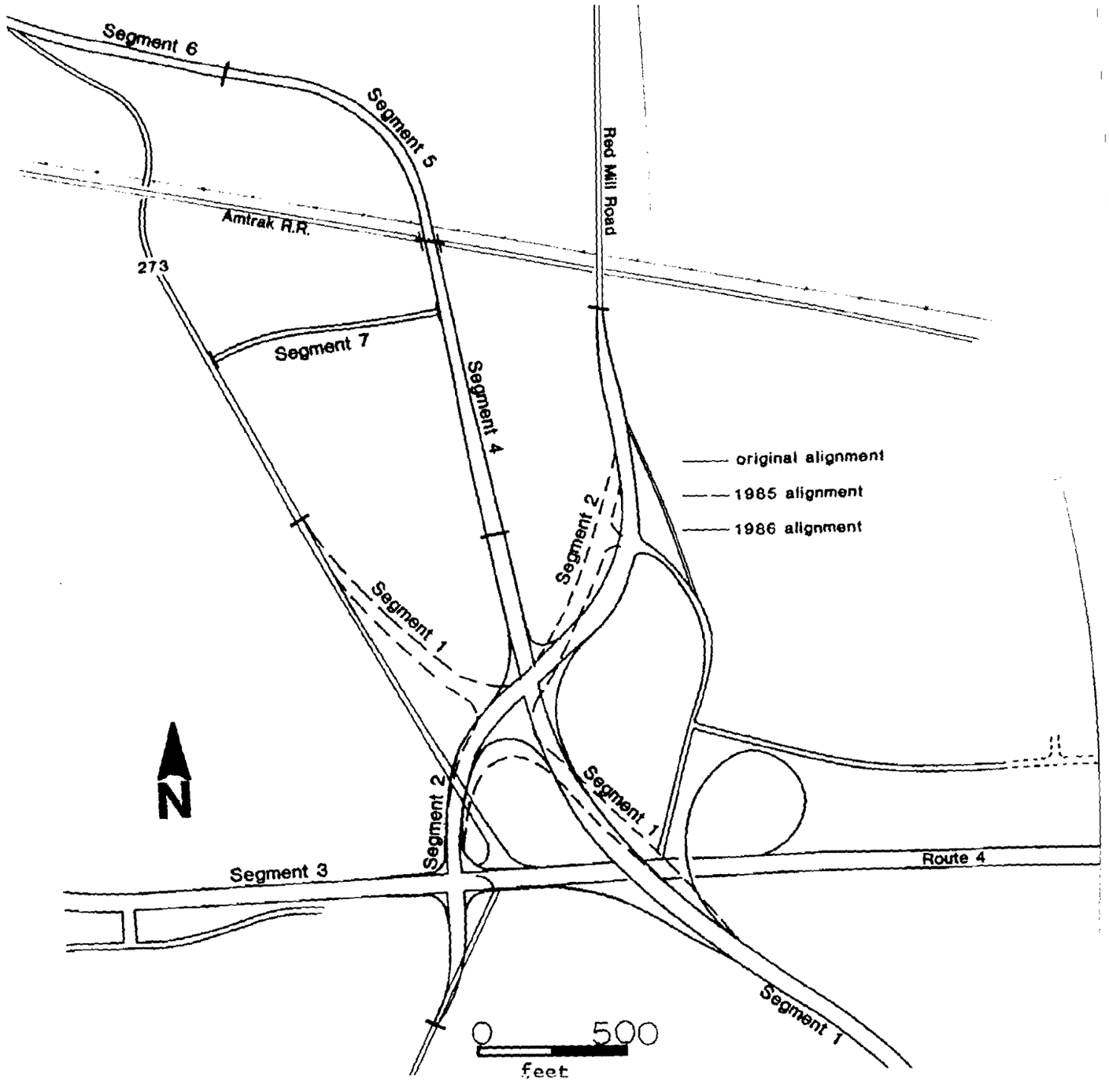


FIGURE 2
1985 vs. 1986 Alignments



necessitated the Phase I/II survey of an access road originating within segment 4 and terminating at Route 273 and approximately 1,100' in length (Figure 2). This alignment was designated as Segment 7.

RESEARCH METHODS

The research methods employed in the additional Phase I/II survey were identical to those of the initial Phase I/II survey. The model employed to predict high probability zones for prehistoric site location was also identical to that of the initial survey (Coleman and Custer 1986).

RESULTS

Table 1 presents an updated status of all the cultural resources located by the 1985 and 1986 archaeological testing. The following discussion will detail the results of the 1986 fieldwork.

Segment 1: Route 273 - Birchwood Park to Greenleaf Manor

Due to an alignment shift beginning within the central area of former Segment 1, additional testing was carried out within the new ROW high probability areas to the east of the known site boundaries of the Thomas Ogle Site (7NC-D-69, N-5309) (Figures 2, 3). No cultural materials were located in any of these test units. In the northern terminus of this segment, small rises within poorly drained areas adjacent to the southern boundary of the Paradise Lane Site, also were investigated (Figure 3). One contracting stem ironstone projectile point was the only cultural material located by the testing. Additional

TABLE 1
Ogletown Interchange
Current Status of Cultural Resources

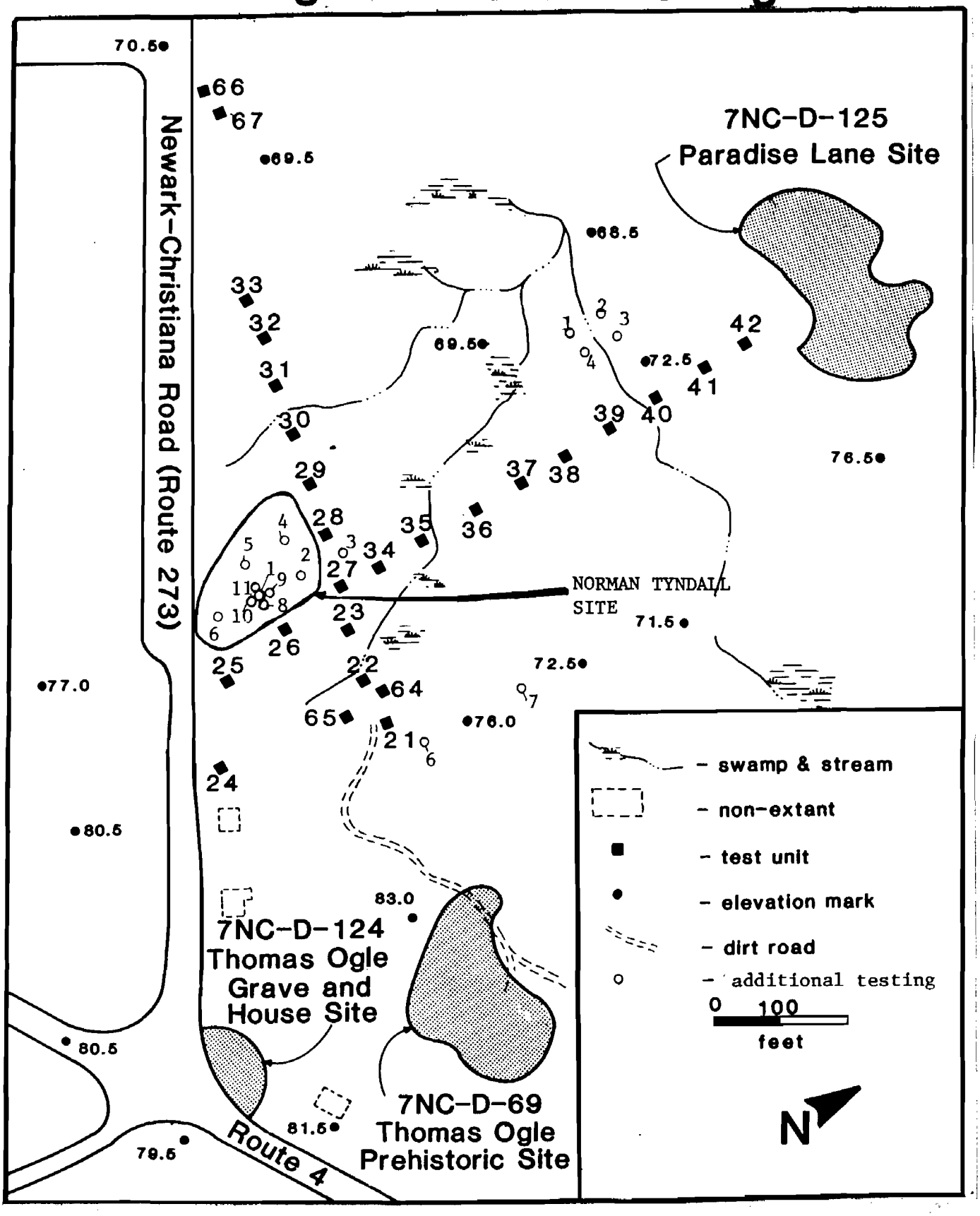
CULTURAL RESOURCE NAME	CRS #	ARCH. SITE #	A	B	C	D	E	F	G	H	I	J
Dairy Queen Site	10895	7NC-D-129	X				X		X	X	X	X
Paradise Lane Site + EXTENSION	10891	7NC-D-125	X				X		X	X	X	X
W. E. Heisler Site	10894	7NC-D-128	X	X	X	X		X		X	X	
Thomas Ogle Prehistoric Site	5309	7NC-D-69	X				X		X	X	X	
W. E. Heisler Tenant House Site	10893	7NC-D-127	X		X	X		X		X	X	
A. Temple Site	5308	7NC-D-68	X	X	X	X	X	X		X	X	X
Thomas Ogle House and Gravesite	215	7NC-D-124	X	X	X	X	X	X		X	X	
John Ruth Inn Site	10892	7NC-D-126	X	X	X	X		X		X	X	X
Robert Ogle House Site			X	X	X	X		X				
NORMAN TYNDALL SITE	10945	7NC-D-132	X						X	X	X	
JOHN SAYER HOUSE			X		X	X		X				

KEY:

A - BAHP File information with CRS Number
B - appears on Rea and Price (1849)
C - appears on Beer's Atlas (1898)
D - appears on Baist's Atlas (1893)
E - identified by Thomas (1980)
F - historic archaeological site
G - prehistoric archaeological site
H - Phase I investigation completed
I - Phase II testing completed
J - data recovery recommended, IF SITE CANNOT BE AVOIDED

FIGURE 3

Segment 1 and 2 Testing



testing adjacent to this find confirmed its isolated nature. The remainder of the ROW of the segment, passing through very poorly drained swamp/lowlands was not subjected to further testing.

Segment 2: Salem Church Road Industrial Park to Red Mill Road

The 1986 design concept created no additional ROW south of the Route 273 crossing and no further archaeological testing was carried out in this part of the segment. Just to the north of the Route 273 crossing, a westward shift of the proposed alignment placed the ROW within a high probability area consisting of a well-drained rise overlooking a swamp/lowland. Testing located both historic and prehistoric artifacts:

SITE NAME: Norman Tyndall Site

SITE NUMBER: 7NC-D-132

CRS NUMBER: N-10945

LOCATION DESCRIPTION: The Norman Tyndall Site was located on a south-facing terrace, approximately 100 feet north of the Ogletown-Newark Road (Figure 3). The site lies totally within the proposed ROW alignment for the Salem Church - Red Mill Road connector.

PHASE I SURVEY METHODS AND RESULTS: The site was located during the 1986 excavation of seven 1 m units north of a previous transect within the new ROW alignment. Debitage was recovered primarily from plowzone contexts, but one unit yielded 6 flakes from buried contexts 30-60 cm below ground surface. No diagnostic artifacts or tools were located. Mid-19th century historic artifacts were infrequently recovered from the plowzone horizon in all but one of the units.

PHASE II SURVEY METHODS AND RESULTS: An additional four 1 m test units were excavated at a 5 m distance from the single unit containing intact material in order to define the limits of the buried artifact bearing deposits. One of the units recovered two prehistoric artifacts from a disturbed, plowzone context.

DISCUSSION OF RESULTS: The Norman Tyndall Site assemblage of 11 flakes and a single tool distributed over a 40 m x 60 m area indicates that the site is a limited occupation procurement site. There was a low frequency of artifacts in the plowzone and only 6 flakes were recovered from intact deposits. The site area with buried prehistoric artifacts was determined to be approximately 20 m N-S x 20 m E-W.

NR ELIGIBILITY: The site is considered not eligible for inclusion on the National Register under any criteria. Plowing has partially disturbed the site's integrity and the cultural materials with good context are of low density and restricted to a very limited horizontal area.

IMPACT: The site is directly within the impact zone of the proposed alignment.

RECOMMENDED MITIGATION ALTERNATIVES: None.

SITE NAME: Paradise Lane Site (extension)

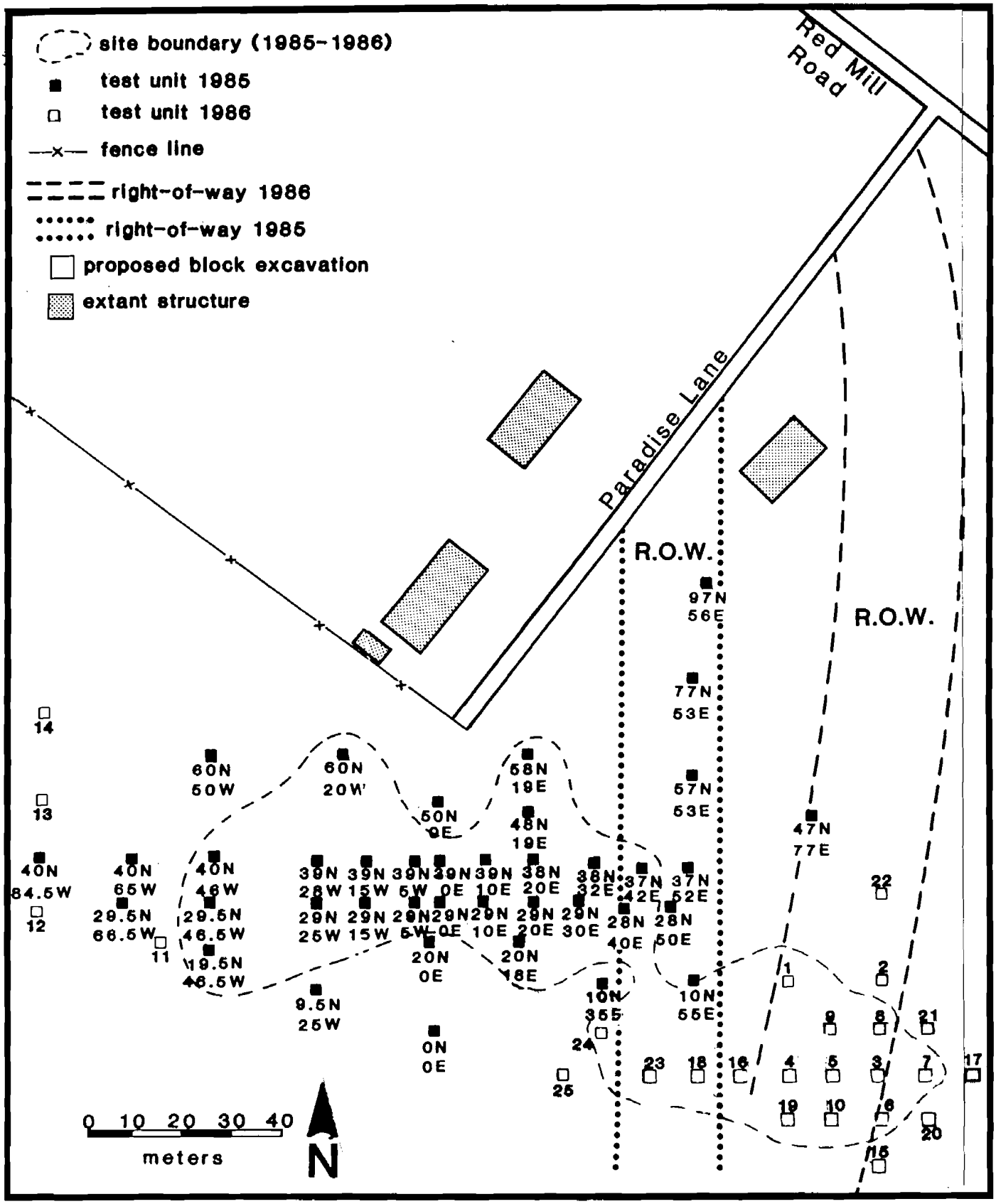
SITE NUMBER: 7NC-D-125

CRS NUMBER: N-10891

LOCATION DESCRIPTION: The Paradise Lane Site is located on a heavily wooded east-west trending rise of land, approximately 100 feet south of the end of Paradise Lane (Figures 3 and 4). The site lies on a south-facing rise overlooking a large area of

FIGURE 4

Paradise Lane Site N-10891, 7-NC-D-125



poorly-drained woodland including several small bay/basin features.

1985 and 1986 PHASE I/II SURVEY METHODS AND RESULTS: The site was located during a cultural resource survey of the ROW designated as Segment 2 of the Ogletown interchange project (Coleman and Custer 1986). A total of thirty-nine 1 m units recovered 316 prehistoric artifacts, most contained within buried contexts down to 30 cm below ground surface (Table 2). An eastward shift of the proposed ROW necessitated additional archaeological testing at the eastern limits of the known site boundaries.

PHASE II METHODS AND DISCUSSION OF RESULTS: An additional twenty-five 1 m test units were excavated within the new ROW employing the previously established grid, in an attempt to locate any features and to further define the site boundaries (Figure 4). Test units derived substantial amounts of prehistoric materials from buried stratigraphic contexts. Several units yielded prehistoric materials within excavated levels 60 to 70 cm below ground surface. The raw material types and overall lithic assemblage derived from the 1986 testing of the newly defined SE extension of the site differed from that from the area of the site tested during 1985 and may represent a spatially and temporally separate episode of lithic reduction. Unlike the debitage from the 1985 testing which consisted of >60% quartz, prehistoric artifacts recovered from the 1986 testing featured a predominance of jasper and chert and a majority of the debitage recovered exhibited no cortex. Diagnostics recovered included five biface fragments including one that could be attributed to the Woodland I Period (Table 2).

TABLE 2

7NC-D-125, N-10891 General Artifact Inventory (1985-1986)

	LA/WLI Side-notched Point	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Quartz Flake Tool	Jasper Flake Tool	Quartz E.S.B.R.	Chert E.S.B.R.	Jasper E.S.B.R.	Quartz L.S.B.R.	Jasper L.S.B.R.	Quartz Biface Fragment	Chert Core	F.C.R.	Minguannon Body Sherd	Clear Bottle Glass	Color Bottle Glass	Window Glass	Plastic	Misc. Metal	TOTAL	PREHISTORIC	HISTORIC
TEST UNIT #1, LV.1																	10					10	-	10
" " #1, LV.2			(1)												1							(1)1	2	-
" " #1, LV.3											NCM											0	-	-
" " #1, LV.4											NCM											0	-	-
TEST UNIT #2, LV.1																		1				1	-	1
" " #2, LV.2											NCM											0	-	-
" " #2, LV.3											NCM											0	-	-
" " #2, LV.4											NCM											0	-	-
" " #2, LV.5											NCM											0	-	-
TEST UNIT #3, LV.1					23												109				1	133	23	110
" " #3, LV.2		1			48	(6)																(6)49	50	-
" " #3, LV.3		1			68																	69	69	-
" " #3, LV.4				3	(6) 8																	(6)11	12	-
" " #3, LV.5					8																	8	8	-
" " #3, LV.6					2																	2	2	-
" " #3, LV.7											NCM											0	-	-
TEST UNIT #4, LV.1											NCM											0	-	-
" " #4, LV.2		1																				1	1	-
" " #4, LV.3											NCM											0	-	-
" " #4, LV.4											NCM											0	-	-
TEST UNIT #5, LV.1											NCM											0	-	-
" " #5, LV.2		2			17										1							20	20	-
" " #5, LV.3		2			15																	17	17	-
" " #5, LV.4					7																	7	7	-
" " #5, LV.5		1			2																	3	3	-
SUBTOTAL	0	8	(1)	3(1)	199	0	0	0	0	0	0	0	0	0	2	0	119	1	0	0	1	335	214	121

TABLE 2

7NC-D-125, N-10891- General Artifact Inventory (1985-1986)

	LA/WLI Side-notched Point	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Quartz Flake Tool	Jasper Flake Tool	Quartz E.S.B.R.	Chert E.S.B.R.	Jasper E.S.B.R.	Quartz L.S.B.R.	Jasper L.S.B.R.	Quartz Biface Fragment	Chert Core	F.C.R.	Body Sherd Mingnannon	Clear Bottle Glass	Color Bottle Glass	Window Glass	Plastic	Misc. Metal	TOTAL	PREHISTORIC	HISTORIC
TEST UNIT #5, LV.6					1																1	1	-
" " #5, LV.7											NCM										0	-	-
" " #5, LV.8											NCM										0	-	-
TEST UNIT #6, LV.1					1												4			2	7	1	6
" " #6, LV.2					1																1	1	-
" " #6, LV.3											NCM										0	-	-
" " #6, LV.4											NCM										0	-	-
TEST UNIT #7, LV.1					3																3	3	-
" " #7, LV.2				(1)	1												3				(1)4	1(1)	3
" " #7, LV.3					1												2				3	1	2
" " #7, LV.4					1																1	1	-
" " #7, LV.5											NCM										0	-	-
" " #7, LV.6											NCM										0	-	-
TEST UNIT #8, LV.1											NCM										0	-	-
" " #8, LV.2			(6)		1									8							(6)9	9(6)	-
" " #8, LV.3		1			2									1							4	4	-
" " #8, LV.4					1																1	1	-
" " #8, LV.5											NCM										0	-	-
" " #8, LV.6											NCM										0	-	-
TEST UNIT #9, LV.1		1															1				2	1	1
" " #9, LV.2					1																1	1	-
" " #9, LV.3											NCM										0	-	-
" " #9, LV.4			1(1)																		(1)1	1(1)	-
" " #9, LV.5											NCM										0	-	-
" " #9, LV.6											NCM										0	-	-
SUBTOTAL	0	2	1(8)	(1)	14	0	0	0	0	0	0	0	0	9	0	0	10	0	0	2	41	26(6)	12

TABLE 2

7NC-D-125, N-10891- General Artifact Inventory (1985-1986)

	LA/WLI Side-notched Point	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Quartz Flake Tool	Jasper Flake Tool	Quartz E.S.B.R.	Chert E.S.B.R.	Jasper E.S.B.R.	Quartz L.S.B.R.	Jasper L.S.B.R.	Quartz Biface Fragment	Chert Core	F.C.R.	Minguannon Body Sherd	Clear Bottle Glass	Color Bottle Glass	Window Glass	Plastic	Misc. Metal	TOTAL	PREHISTORIC	HISTORIC
TEST UNIT #10, LV.1					3					1												4	4	-
" " #10, LV.2		2			4																	6	6	-
" " #10, LV.3		1																				1	1	-
" " #10, LV.4											NCM											0	-	-
" " #10, LV.5											NCM											0	-	-
TEST UNIT #11, LV.1											NCM											0	-	-
" " #11, LV.2											NCM											0	-	-
TEST UNIT #12, LV.1											NCM											0	-	-
" " #12, LV.2											NCM											0	-	-
TEST UNIT #13, LV.1											NCM											0	-	-
" " #13, LV.2											NCM											0	-	-
" " #13, LV.3											NCM											0	-	-
TEST UNIT #14, LV.1											NCM											0	-	-
" " #14, LV.2											NCM											0	-	-
TEST UNIT #15, LV.1											NCM											0	-	-
" " #15, LV.2											NCM											0	-	-
TEST UNIT #16, LV.1					4																	4	4	-
" " #16, LV.2			1		7																	8	8	-
" " #16, LV.3					4																	4	4	-
" " #16, LV.4											NCM											0	-	-
" " #16, LV.5											NCM											0	-	-
TEST UNIT #17, LV.1											NCM											0	-	-
" " #17, LV.2											NCM											0	-	-
TEST UNIT #18, LV.1					5													18				23	5	18
" " #18, LV.2				1	9																	10	10	-
SUBTOTAL	0	3	1	1	36	0	0	0	0	1	0	0	0	0	0	0	0	18	0	0	0	60	42	18

TABLE 2

7NC-D-125, N-10891- General Artifact Inventory (1985-1986)

	LA/WLI Side-notched Point	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Quartz Flake Tool	Jasper Flake Tool	Quartz E.S.B.R.	Chert E.S.B.R.	Jasper E.S.B.R.	Quartz L.S.B.R.	Jasper L.S.B.R.	Quartz Biface Fragment	Chert Core	F.C.R.	Minguannon Body Sherd	Clear Bottle Glass	Color Bottle Glass	Window Glass	Plastic	Misc. Metal	TOTAL	PREHISTORIC	HISTORIC	
TEST UNIT #18, LV.3		1		3	8					1								1				14	13	1	
" " #18, LV.4			(6)	1	7																	9(6)	9(6)	-	
" " #18, LV.5												1										1	1	-	
" " #18, LV.6					1																	1	1	-	
" " #18, LV.7										NCM												0	-	-	
TEST UNIT #19, LV.1										NCM												0	-	-	
" " #19, LV.2			2		1																	3	3	-	
" " #19, LV.3			4												1							5	5	-	
" " #19, LV.4										NCM												0	-	-	
" " #19, LV.5										NCM												0	-	-	
TEST UNIT #20, LV.1										NCM												0	-	-	
" " #20, LV.2																		1				1	-	1	
" " #20, LV.3										NCM												0	-	-	
TEST UNIT #21, LV.1										NCM												0	-	-	
" " #21, LV.2				2	4																	6	6	-	
" " #21, LV.3										NCM												0	-	-	
" " #21, LV.4										NCM												0	-	-	
TEST UNIT #22, LV.1										NCM												0	-	-	
" " #22, LV.2										NCM												0	-	-	
" " #22, LV.3										NCM												0	-	-	
" " #22, LV.4										NCM												0	-	-	
TEST UNIT #23, LV.1		1			5												4	5				15	6	9	
" " #23, LV.2		2		2	19										1							24	24	-	
" " #23, LV.3					24																	24	24	-	
" " #23, LV.4		1			10																	11	11	-	
SUBTOTAL	0	5	7(6)	8	79	0	0	0	0	1	0	1	0	0	2	0	4	7	0	0	0	116	103(6)	11	

TABLE 2

7NC-D-125, N-10891- General Artifact Inventory (1985-1986)

	LA/MLI Side-notched Point	Quartz Flake	Quartzite Flake	Chert Flake	Jasper Flake	Quartz Flake Tool	Jasper Flake Tool	Quartz E.S.B.R.	Chert E.S.B.R.	Jasper E.S.B.R.	Quartz L.S.B.R.	Jasper L.S.B.R.	Quartz Biface Fragment	Chert Core	F.C.R.	Minguannon Body Sherd	Clear Bottle Glass	Color Bottle Glass	Window Glass	Plastic	Misc. Metal	TOTAL	PREHISTORIC	HISTORIC
TEST UNIT #23, LV. 5					3																3	3	-
" " #23, LV. 6					1																1	1	-
" " #23, LV. 7									NCM												0	-	-
TEST UNIT #24, LV. 1																	37				37	-	37
" " #24, LV. 2									NCM												0	-	-
" " #24, LV. 3									NCM												0	-	-
TEST UNIT #25, LV. 1									NCM												0	-	-
" " #25, LV. 2									NCM												0	-	-
" " #25, LV. 3									NCM												0	-	-
SUBTOTAL	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	41	4	37
TOTAL	0	18	100 ①	12 ②	332	0	0	0	0	2	0	1	0	0	13	0	123	76	0	0	3	593	389 (+1) ①	199

DISCUSSION OF RESULTS: With the exception of four 1 m units which encountered a plowzone horizon, all of the artifacts were recovered from intact soils (Figure 4). Prehistoric artifacts are included in soils deposited by both aeolian and colluvial processes underlain by Pleistocene clays and sands (Pizzuto 1986).

The artifact assemblage recovered from the 1986 testing contained 380 flakes, approximately 10% of which showed signs of utilization, several blade-like tools, and a variety of biface fragments.

The redefined site area included an area approximately 200 m E-W x 80 m N-S, interrupted at the intersection of the 40E and the 10N line by a small area of poorly drained soils and a corresponding lack of prehistoric artifacts.

NR ELIGIBILITY: The Paradise Lane Site is eligible for inclusion on the National Register under criterion D because the site has and is likely to yield information important in prehistory as the site represents a preserved example of a rare site type for the Fall Line/Upper Coastal Plain transition zone. Although micro-band camps have been recorded for the Woodland I Period in the adjacent Fall Line zone of northern Delaware, no well-preserved sites have been identified for the interior zone or in the transitional Fall Line/Interior zone. Usually natural erosion or modern development has destroyed these sites in northern Delaware. Most of the known sites for the surrounding area are large base camps along major drainages or small lithic scatters in upland areas. The Paradise Lane Site is unique in that it

represents a well-stratified, intermediate size site in an upland setting.

IMPACT: Approximately 60% of the site is located within the direct impact zone of the proposed alignment (Figure 4). In addition, the unplowed nature of the site makes it highly susceptable to indirect effects from the project.

RECOMMENDED MITIGATION ALTERNATIVES: Avoidance or preservation are the recommended mitigation alternatives, due to the direct and indirect impacts of the proposed construction. If avoidance is not a possible alternative, then data recovery would be the recommended mitigation alternative.

Segment 3: Route 4 Improvements

Within this segment the redesign of the Ogletown interchange did not expand the ROW into areas previously untested. The creation of a frontage road originating at the western terminus of the project areas and paralleling Route 4 on the southern side creates further impact to the mid-19th century A. Temple Site (7NC-D-68, N-5308). This preserved archaeological site is considered to be eligible for nomination to the National Register (Coleman and Custer 1986). Data recovery remains the recommended mitigation alternative due to the significance of the site combined with the unfeasibility of alternative alignments which would avoid the site.

Segment 4: Route 273-Greenleaf Manor to AMTRAK Railroad

The proposed ROW within this segment is composed of a well-drained wooded area on the eastern terminus, extending for approximately 1,000 feet to a 500 foot strip of poorly-drained woodland bordering the AMTRAK RR tracks to the south.

A total of twenty-four 1 m test units were excavated within this segment of the ROW (Figure 5). Four of the units yielded a very low frequency of artifacts .ie one or two artifacts per unit, including a heavily resharpened, basally-notched biface. Additional testing of areas adjacent to these units produced no additional cultural material and confirmed the isolated, discontinuous distribution of the cultural material which precluded any further testing.

Segment 5 Route 273: AMTRAK Railroad Tracks to Cool Run

An uncontrolled surface collection of field "B" within the proposed ROW yielded two historic artifacts. Because of poor surface visibility, a total of five 1 m test units were excavated (Figure 6). No cultural material were recovered and all units encounterd very poorly drained soils. Based on these results no further testing was conducted at this location.

The ROW within agricultural field "C" was subjected to a controlled surface collection after a preliminary flagging of cultural materials. The controlled surface collection, utilizing 25 10 m x 10 m collection units, recovered seven prehistoric materials in only four units. While 21 units yielded historic materials, over 90% of these were shotgun shells/plugs and can be attributed to late 20th century hunting activities. A total of eleven 1 m test units were also excavated within and adjacent to the ROW (Figure 6). A small number of artifacts were recovered from plowzone contexts, with none recovered from buried contexts beneath the plowzone. The lack of spatial patterning and low frequency of artifacts precluded any further testing.

FIGURE 5
Segment 4 Testing

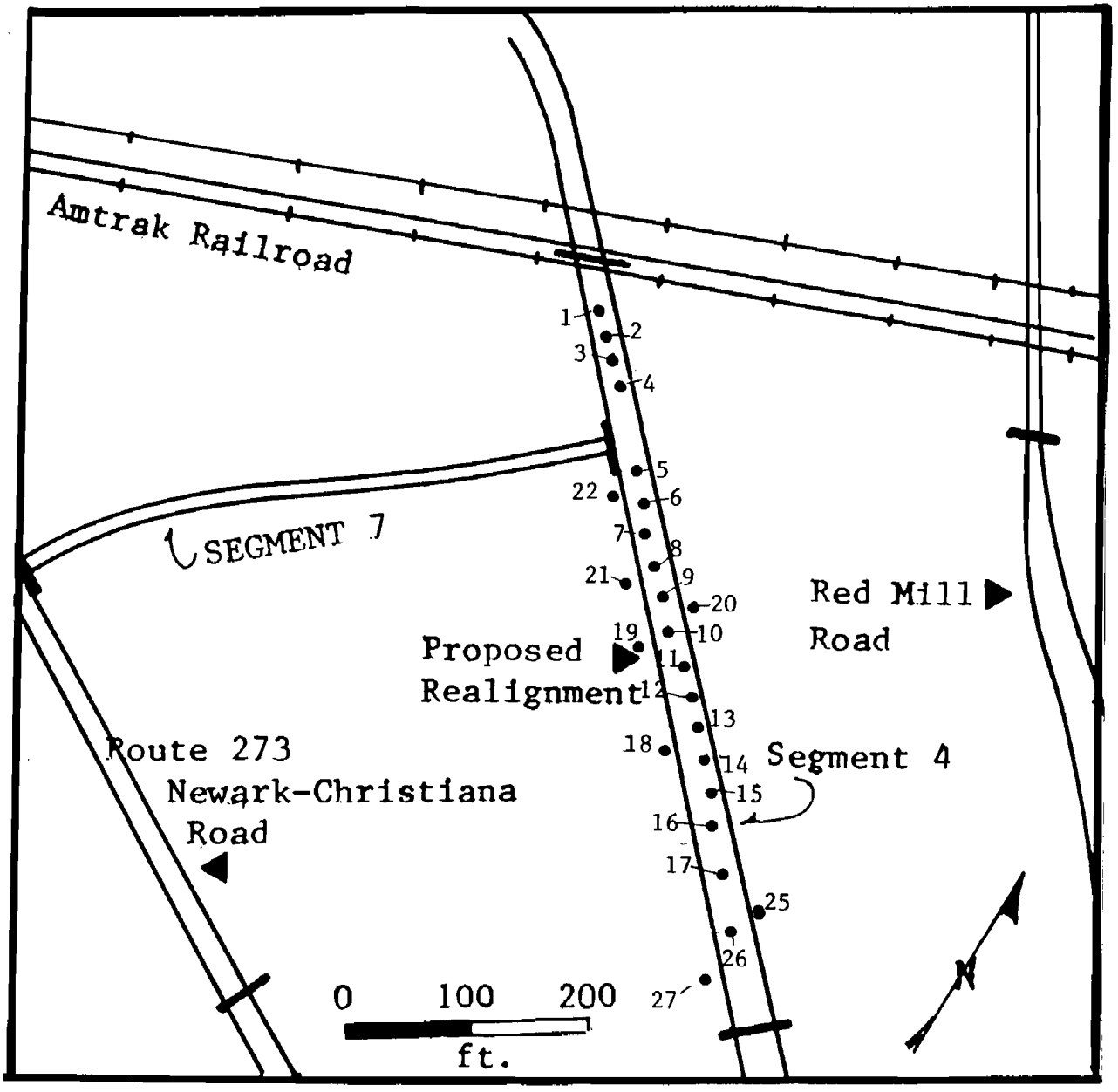
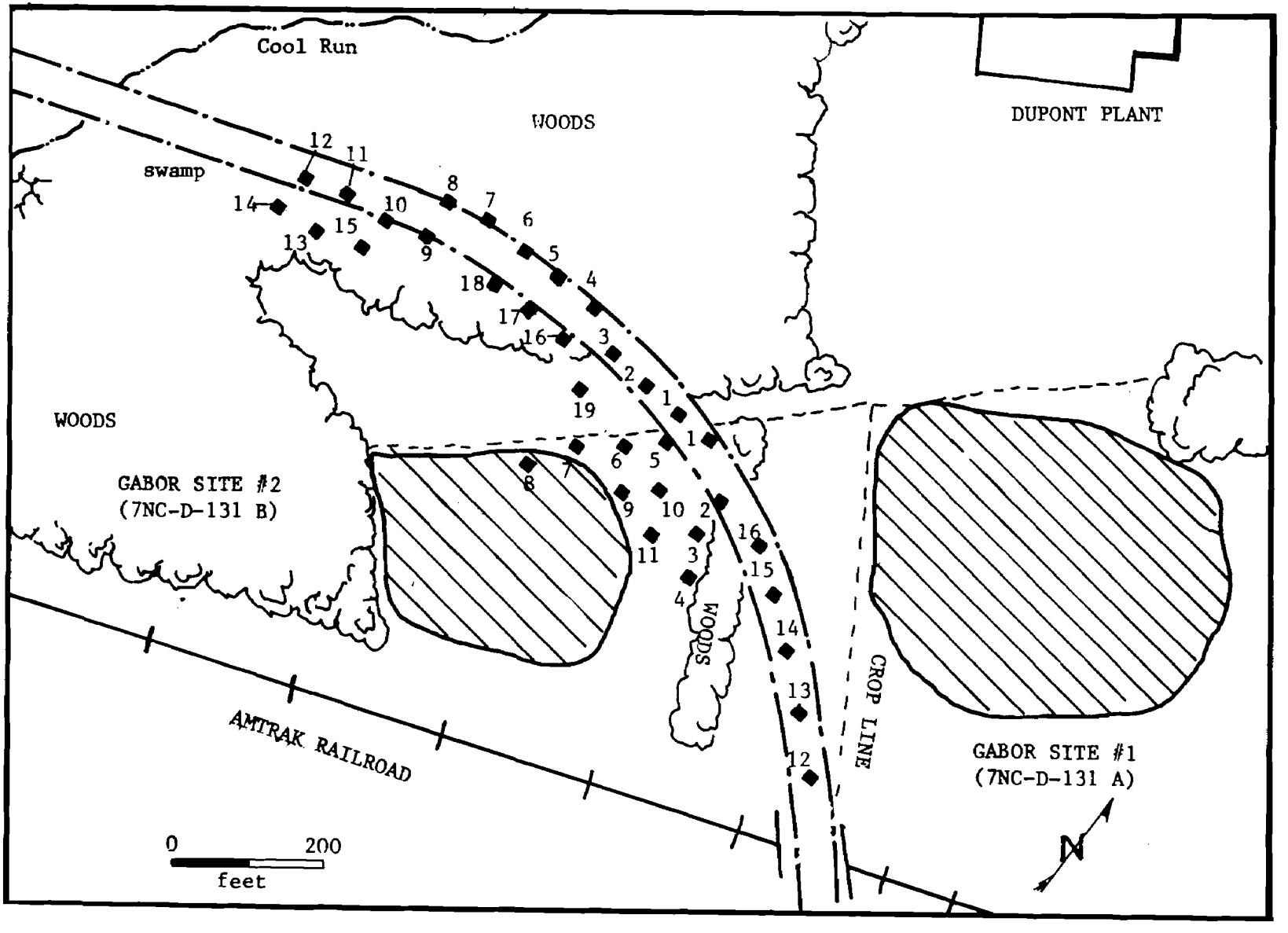


FIGURE 6
Segment 5 Testing



Two prehistoric sites were identified during Phase I reconnaissance of plowed fields "A" and "C" adjacent to the ROW (Figure 6). The Gabor Site #1, 7NC-D-131(A), was located as a discontinuous scatter of predominantly quartz and quartzite debitage over a 225 m x 200 m area in field "A". A single biface was among the 21 prehistoric artifacts recoverd by the surface collection. Mid-19th to mid-20th century ceramics and glass were also found within the site area.

The Gabor Site #2, 7NC-D-131(B), was located on an east facing rise approximately 300 feet south of the proposed ROW alignment (Figure 6). Two concentrations of lithic scatter, again predominantly quartz and quartzite were identified within a discontinuous distribution over a 200 m x 130 m area. Eighty-four prehistoric artifacts were collected, including two biface fragments (Palmer ca. 8,000 B.C., Stemmed Woodland I ca. 2,000 B.C.). Because of their location outside of the proposed ROW neither site was subjected to Phase II investigation.

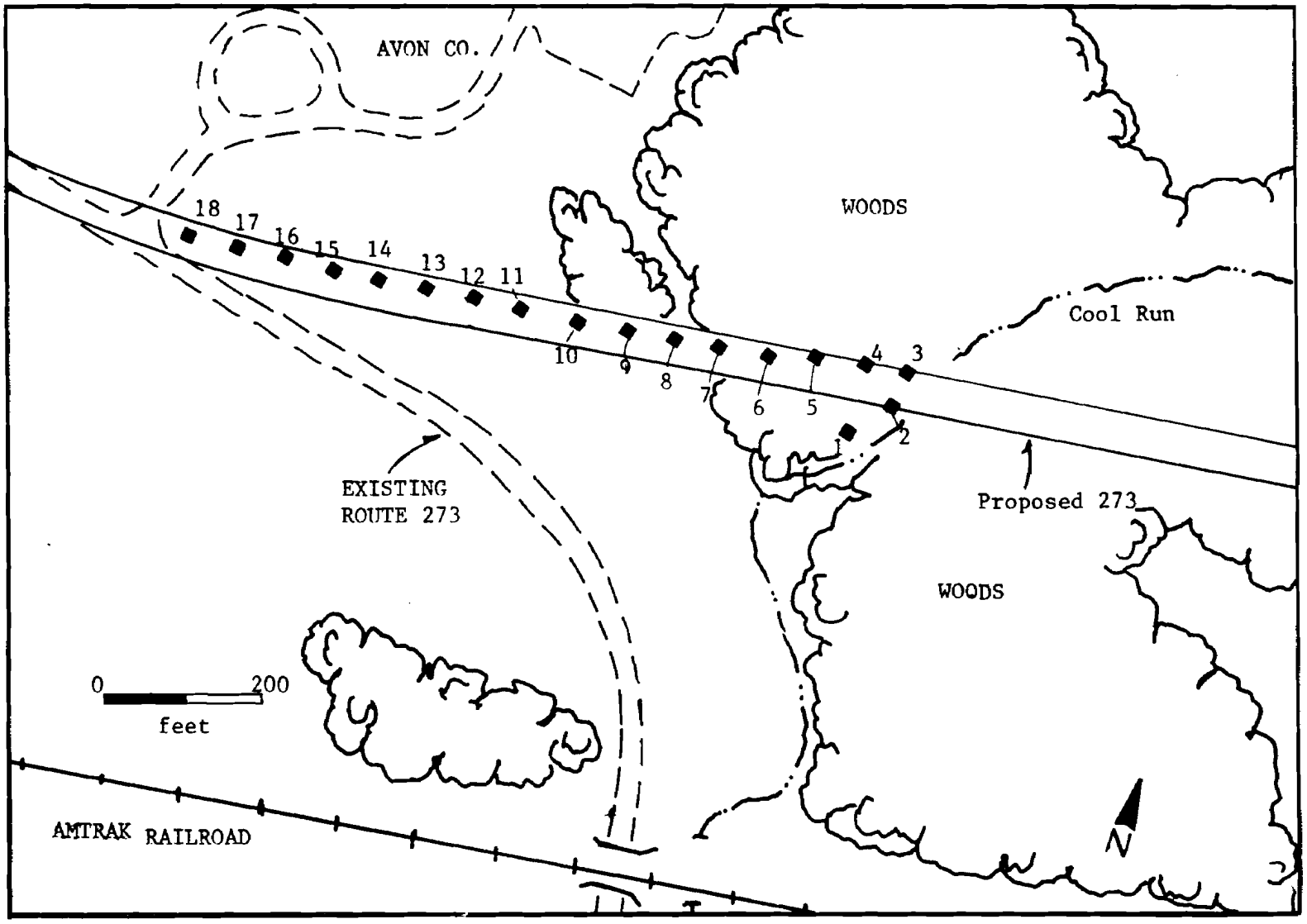
The southern floodplain of Cool Run was not tested because the emplacement of a major New Castle Couty sewer line had totally disturbed a 55' wide corridor paralleling Cool Run and the remainder of the floodplain showed extensive scouring and redeposition of sediments.

SEGMENT 6: Route 273 - Cool Run to Avon

This segment consists of a narrow floodplain area with recent flood deposits and erosion and an adjacent terrace and hillslope area leading up to a level, grassy area.

A total of ten 1 m units were excavated within the floodplain and terrace slopes adjacent to Cool Run (Figure 7).

FIGURE 7
Segment 6 Testing



The floodplain stratigraphy showed 20th century sediments resting unconformably on Pleistocene sands and clays. Significant erosion of Holocene deposits was also evident on the terrace and hillslope areas. The only cultural materials encountered were single quartz flakes recovered from disturbed contexts within two of the units.

Testing through the excavation of eight 1 m units within the western terminus of the proposed Route 273 realignment revealed significant soil disturbances caused by earthmoving activities associated with the Avon plant constructuion. Emplacement of numerous utility lines was also found to have significantly disturbed soil stratigraphy. The area, now grass covered, was also found to have been plowed. Historic artifacts were recovered from disturbed contexts in all of these units. Historic research revealed that no structures had existed within the ROW at this location before the ca. 1950 construction of an outdoor pool and recreation area. A 1955 aerial of the area shows this complex and also the main house and tenant house complexes, both located well outside of the proposed ROW. Artifacts and cultural features associated with this operation were located in one of these test units. The lack of significance combined with the lack of integrity precluded Phase II excavations at this location. The Phase I background historic research also indicated that archaeological evidence of a bark mill (ca. 1830) might remain within the project area. Preliminary Phase I reconnaissance determined that the construction of the RR embankment over Cool Run had completely destroyed the site.

SEGMENT 7: Access Road-New 273 to old 273

The eastern terminus of this segment, located in a poorly drained woodland, was not tested. The central section had been the site of a soil mining operation and was not tested. At the western terminus, an extant mid-19th century frame structure is located within the direct impact zone. A preliminary reconnaissance revealed that the back and southern side yards have been graded into a parking lot and no outbuildings are extant. Architecturally, the structure has been extensively modified through numerous 20th century additions, the application of aluminum siding, and structural modifications related to the conversion of the residence into a commercial business. It appears that the structure is not eligible for nomination to the National Register under criteria A, B, or C. Permission to carry out Phase I/II archaeological research was denied by the present owner, A and L Associates. It is therefore not known whether the site is eligible under criteria D and it is recommended that an Phase I/II archaeological survey of this site be carried out.

FIGURE 8
Segment 7 Testing